ANNUAL REPORT

2023

UNFOLD

Publications

Institute of Science and Technology Austria

Publications

Joint publications involving several groups are listed multiple times

Research Groups

Alistarh Group

Alistarh D-A, Rybicki J, Voitovych S. 2025. **Near-optimal leader election in population protocols on graphs.** Distributed Computing. 38, 207–245.

Alistarh D-A, Ellen F, Fedorov A. 2025. **An almost-logarithmic lower bound for leader election with bounded value contention.** 39th International Symposium on Distributed Computing. DISC: Symposium on Distributed Computing, LIPIcs, vol. 356, 3:1-3:16.

Chen J, Yao D, Pervez AA, Alistarh D-A, Locatello F. 2025. **Scalable mechanistic neural networks.** 13th International Conference on Learning Representations. ICLR: International Conference on Learning Representations, 63716–63737.

Frantar E, Castro RL, Chen J, Hoefler T, Alistarh D-A. 2025. **MARLIN: Mixed-precision auto-regressive parallel inference on Large Language Models.** Proceedings of the 30th ACM SIGPLAN Annual Symposium on Principles and Practice of Parallel Programming. PPoPP: Symposium on Principles and Practice of Parallel Programming, 239–251.

Jin T, Humayun AI, Evci U, Subramanian S, Yazdanbakhsh A, Alistarh D-A, Dziugaite GK. 2025. **The journey matters: Average parameter count over pre-training unifies sparse and dense scaling laws.** 13th International Conference on Learning Representations. ICLR: International Conference on Learning Representations, 85165–85181.

Kurtic E, Marques A, Pandit S, Kurtz M, Alistarh D-A. 2025. **"Give me BF16 or give me death"? Accuracy-performance trade-offs in LLM quantization.** Proceedings of the 63rd Annual Meeting of the Association for Computational Linguistics. ACL: Meeting of the Association for Computational Linguistics, 26872–26886.

Kurtic E, Kuznedelev D, Frantar E, Goinv M, Pandit S, Agarwalla A, Nguyen T, Marques A, Kurtz M, Alistarh D-A. 2025. **Sparse Fine-Tuning for Inference Acceleration of Large Language Models.** In: Enhancing LLM Performance. Efficacy, Fine-Tuning, and Inference Techniques. Machine Translation: Technologies and Applications, 83–97.

Martynov P, Buzdalov M, Pankratov S, Aksenov V, Schmid S. 2025. **In the search of optimal tree networks: Hardness and heuristics.** Proceedings of the 2025 Genetic and Evolutionary Computation Conference. GECCO: Genetic and evolutionary computation conference, 249–257.

Nguyen AD, Markov I, Wu FZ, Ramezani-Kebrya A, Antonakopoulos K, Alistarh D-A, Cevher V. 2025. **Layer-wise quantization for quantized optimistic dual averaging.** 42nd International Conference on Machine Learning. ICML: International Conference on Machine Learning, PMLR, vol. 267, 46026–46072.

Robert T, Safaryan M, Modoranu I-V, Alistarh D-A. 2025. **LDAdam: Adaptive optimization from low-dimensional gradient statistics.** 13th International Conference on Learning Representations. ICLR: International Conference on Learning Representations, 101877–101913.

Sawmya S, Kong L, Markov I, Alistarh D-A, Shavit N. 2025. **Wasserstein distances, neuronal entanglement, and sparsity.** 13th International Conference on Learning Representations. ICLR: International Conference on Learning Representations, 26244–26274.

Sieberling O, Kuznedelev D, Kurtic E, Alistarh D-A. 2025. **EvoPress: Accurate dynamic model compression via evolutionary search.** 42nd International Conference on Machine Learning. ICML: International Conference on Machine Learning, PMLR, vol. 267, 55556–55590.

Talaei S, Ansaripour M, Nadiradze G, Alistarh D-A. 2025. **Hybrid decentralized optimization: Leveraging both first- and zeroth-order optimizers for faster convergence.** Proceedings of the 39th AAAI Conference on Artificial Intelligence. 39(19), 20778–20786.

Tuo P, Zeng Z, Chen J, Cheng B. 2025. **Scalable multitemperature free energy sampling of classical Ising spin states.** Journal of Chemical Theory and Computation. 21(22), 11427–11435.

Alpichshev Group

Lorenc D, Volosniev A, Zhumekenov AA, Lee S, Ibáñez M, Bakr OM, Lemeshko M, Alpichshev Z. 2025. **Observation of analogue dynamic Schwinger effect and non-perturbative light sensing in lead halide perovskites.** ACS Photonics. 12(9), 5220–5230.

Shiva Kumar A, Maslov M, Lemeshko M, Volosniev A, Alpichshev Z. 2025. **Massive Dirac-Pauli physics in lead-halide perovskites.** npj Quantum Materials. 10, 37.

Stöllner A, Lenton IC, Volosniev A, Millen J, Shibuya R, Ishii H, Rak D, Alpichshev Z, David G, Signorell R, Muller CJ, Waitukaitis SR. 2025. **Using optical tweezers to simultaneously trap, charge, and measure the charge of a microparticle in air.** Physical Review Letters. 135(21), 218202.

Barton Group

Arpigiani D, Aschero V, Soler Schaller RM, Amoroso MM. 2025. **A life-cycle approach to understand consequences of silvopastoral use on two native tree species of Northern Patagonia.** Austral Ecology. 50(4), e70058.

Berg JJ, Li X, Riall K, Hayward L, Sella G. 2025. **Mutation–selection–drift balance models of complex diseases.** Genetics. 231(4), iyaf220.

Bustamante GN, Arena ME, Selzer L, Ruggirello M, Rodríguez P, Pedrazzani S, Navarro-Cano JA, Soler Schaller RM. 2025. **Biotic interactions between trees and colonizing shrubs: Implications for active restoration in southern Patagonian forests.** Plant Ecology. 226, 1301–1313.

Ellis T, Field D, Barton NH. 2025. **Joint estimation of paternity, sibships and pollen dispersal in a snapdragon hybrid zone.** Molecular Ecology. 34(15), e70051.

Fouqueau L, Roze D. 2025. **Deleterious mutations and selection for sex in spatially structured, diploid populations.** Evolution. 79(10), 2167–2180.

Fuster-Calvo A, Jaworski CC, Ellis T, Baskett C. 2025. **Reduced fitness under drought stress in F1 hybrids of Antirrhinum majus varieties with divergent flower colors.** American Journal of Botany. 112(12), e70129.

Heim RJ, Rocha AV, Zemlianskii V, Barrett K, Bültmann H, Breen A, Frost GV, Hollingsworth TN, Jandt R, Kozlova M, Kurka A, Jorgenson MT, Landhäusser SM, Loranty MM, Miller EA, Narita K, Pravdolyubova E, Hölzel N, Schaepman-Strub G. 2025. **Arctic tundra ecosystems under fire—Alternative ecosystem states in a changing climate?** Journal of Ecology. 113(5), 1042–1056.

Olusanya OO, Khudiakova K, Sachdeva H. 2025. **Genetic load, eco-evolutionary feedback, and extinction in metapopulations.** The American Naturalist. 205(6), 617–636.

Pal A, Shipilina D, Le Moan A, Mcnairn AJ, Grenier JK, Kucka M, Coop G, Chan YF, Barton NH, Field D, Stankowski S. 2025. **Genealogical analysis of replicate flower colour hybrid zones in Antirrhinum.** Molecular Ecology. 34(22), e70067.

Perini S, Johannesson K, Butlin RK, Westram AM. 2025. **Short INDELs and SNPs as markers of evolutionary processes in hybrid zones.** Journal of Evolutionary Biology. 38(3), 367–378.

Puixeu Sala G, Hayward L. 2025. **The relationship between sexual dimorphism and intersex correlation: Do models support intuition?** Genetics. 231(3), iyaf175.

Raffini F, De Jode A, Johannesson K, Faria R, Zagrodzka ZB, Westram AM, Galindo J, Rolán-Alvarez E, Butlin RK. 2025. **Phenotypic divergence and genomic architecture between parallel ecotypes at two different points on the speciation continuum in a marine snail.** Molecular Ecology. 34(21), e70025.

Surendranadh P, Sachdeva H. 2025. **Effect of assortative mating and sexual selection on polygenic barriers to gene flow.** Evolution. 79(7), 1185–1198.

Zuev AG, Alexandrova AV, Litvinskiy VA, Pravdolyubova E, Tiunov AV. 2025. **Saprotrophic-mycorrhizal divide in stable isotope composition throughout the whole fungus: From mycelium to hymenophore.** Mycorrhiza. 35(2), 32.

Baykusheva Group

Tenhuisen SFR, Pan GA, Song Q, Baykusheva DR, Ferenc Segedin D, Goodge BH, Paik H, Pelliciari J, Bisogni V, Gu Y, Agrestini S, Nag A, García-Fernández M, Zhou KJ, Kourkoutis LF, Brooks CM, Mundy JA, Dean MPM, Mitrano M. 2025. **Magnetic excitations in Ndn+1Nin O3n+1 Ruddlesden-Popper nickelates observed via resonant inelastic x-ray scattering.** Physical Review B. 111(16), 165145.

Benková Group

Babic D, Abualia R, Fiedler L, Qi L, Tellier F, Smoljan A, Rakusova H, Valošek P, Han H, Benková E, Faure JD, Friml J. 2025. **Biosynthesis of very long-chain fatty acids is required for Arabidopsis auxin-mediated embryonic and post-embryonic development.** Plant Journal. 123(3), e70396.

Benková E. 2025. **Unlocking plant regeneration: The role for glutathione.** Developmental Cell. 60(8), 1137–1139.

Gallei MC, Truckenbrodt SM, Kreuzinger C, Inumella S, Vistunou V, Sommer CM, Tavakoli M, Agudelo Duenas N, Vorlaufer J, Jahr W, Randuch M, Johnson AJ, Benková E, Friml J, Danzl JG. 2025. **Super-resolution expansion microscopy in plant roots.** The Plant Cell. 37(4), koaf006.

Gallemi M, Montesinos López JC, Zarevski N, Pribyl J, Skládal P, Hannezo EB, Benková E. 2025. **Dual role of pectin methyl esterase activity in the regulation of plant cell wall biophysical properties.** Frontiers in Plant Science. 16, 1612366.

Kapoor L, Ruzickova N, Zivadinovic P, Leitner V, Sisak MA, Mweka CN, Dobbelaere JA, Katsaros G, Schanda P. 2025. **Quantifying the carbon footprint of conference travel: The case of NMR meetings.** Magnetic Resonance. 6(2), 243–256.

Bernecky Group

Bernecky C. 2025. **Understanding the machinery that reads the genome.** Nature Reviews Molecular Cell Biology. 26, 415.

Rosani U, Altan N, Venier P, Bortoletto E, Volpi N, Bernecky C. 2025. **Ancestral origin and functional expression of a hyaluronic acid pathway complement in mussels.** Biology. 14(8), 930.

Tluckova K, Kaczmarek BM, Testa Salmazo AP, Bernecky C. 2025. **Mechanism of mammalian transcriptional repression by noncoding RNA.** Nature Structural & Molecular Biology. 32, 607–612.

Bickel Group

Bhargava M, Schreck C, Freire M, Hugron PA, Lefebvre S, Sellán S, Bickel B. 2025. **Mesh simplification for unfolding.** Computer Graphics Forum. 44(1), e15269.

Bravo Group

Ocampo RF, Bravo JPK, Dangerfield TL, Nocedal I, Jirde SA, Alexander LM, Thomas NC, Das A, Nielson S, Johnson KA, Brown CT, Butterfield CN, Goltsman DSA, Taylor DW. 2025. **DNA targeting by compact Cas9d and its resurrected ancestor.** Nature Communications. 16, 457.

Zhang Z, Todeschini TC, Wu Y, Kogay R, Naji A, Cardenas Rodriguez J, Mondi R, Kaganovich D, Taylor DW, Bravo JPK, Teplova M, Amen T, Koonin E, Patel DJ, Nobrega FL. 2025. **Kiwa is a membrane-embedded defense supercomplex activated at phage attachment sites.** Cell. 188(21), 5862–5877.e23.

Bronstein Group

Davidson Y, Philipp A, Chakraborty S, Bronstein AM, Gershoni-Poranne R. 2025. **How local is "local"? Deep learning reveals locality of the induced magnetic field of polycyclic aromatic hydrocarbons.** Journal of Chemical Physics. 162(14), 144101.

Gahtan B, Vedula S, Samuelly Leichtag G, Kodesh E, Bronstein AM. 2025. **From lab to wrist: Bridging metabolic monitoring and consumer wearables for heart rate and oxygen consumption modeling.** Proceedings of the 27th International Conference on Multimodal Interaction. ICMI: International Conference on Multimodal Interaction, 60–77.

Kamai I, Bronstein AM, Perets HB. 2025. **Machine Learning inference of stellar properties using integrated photometric and spectroscopic data.** The Astrophysical Journal. 994, 110.

Maddipatla SA, Sellam NE, Bojan MI, Vedula S, Schanda P, Marx A, Bronstein AM. 2025. **Inverse problems with experiment-guided AlphaFold.** Proceedings of the 42nd International Conference on Machine Learning. ICML: International Conference on Machine Learning, PMLR, vol. 267, 42366–42393.

Vedula S, Bronstein AM, Marx A. 2025. **Improving prediction accuracy in chimeric proteins with windowed multiple sequence alignment.** Computational and Structural Biotechnology Journal. 27, 3292–3298.

Browning Group

Browning TD, Glas J, Wang V. 2025. **Optimal sums of three cubes in Fq[t].** Mathematische Zeitschrift. 310(4), 65.

Browning TD, Wilsch FA. 2025. **Integral points on cubic surfaces: heuristics and numerics.** Selecta Mathematica New Series. 31(4), 81.

Browning TD, Sawin W, Wang V. 2025. **Pairs of commuting integer matrices.** Mathematische Annalen. 393, 1863–1880.

Browning TD, Verzobio M. 2025. **Counting integer points on affine surfaces with a side condition.** Discrete Analysis. 2025, 12.

Browning TD, Lyczak J, Smeets A. 2025. **Paucity of rational points on fibrations with multiple fibres.** Algebra & Number Theory. 19(10), 2049–2090.

Chan S, Koymans P, Pagano C, Sofos E. 2025. **Averages of multiplicative functions along equidistributed sequences.** Journal of Number Theory. 273, 1–36.

Diao Y. 2025. **Class numbers and integer points on some Pellian surfaces.** Journal de theorie des nombres de Bordeaux. 37(3), 973–988.

Elsholtz C, Ruzsa IZ, Wurzinger L. 2025. **Sumset growth in progression-free sets.** Acta Arithmetica. 220, 289–303.

Faisant L. 2025. **Motivic distribution of rational curves and twisted products of toric varieties.** Algebra & Number Theory. 19, 883–965.

Glas J, Hochfilzer L. 2025. **On a question of Davenport and diagonal cubic forms over Fq(t).** Mathematische Annalen. 391, 5485–5533.

Naskręcki B, Verzobio M. 2025. **Common valuations of division polynomials.** Proceedings of the Royal Society of Edinburgh Section A: Mathematics. 155(5), 1646–1660.

Rome N, Yamagishi S. 2025. **On the existence of magic squares of powers.** Research in Number Theory. 11(4), 91.

Verzobio M. 2025. **Counting rational points on smooth hypersurfaces with high degree.** International Mathematics Research Notices. 2025(16), rnaf249.

Wang V. 2025. **Diagonal cubic forms and the large sieve.** Mathematika. 71(1), e70008.

Wang V. 2025. **Prime Hasse principles via diophantine second moments.** Journal of the Association for Mathematical Research. 3(1), 1–26.

Wang V. 2025. **Asymptotic growth of translation-dilation orbits.** Advances in Mathematics. 475, 110341.

Wang V, Xu MW. 2025. **Harper's beyond square-root conjecture.** International Mathematics Research Notices. 2025(18), rnaf279.

Bugnet Group

Barrault L, Mathis S, Bugnet LA. 2025. **Constraining differential rotation in γ Doradus stars from the properties of inertial dips.** Astronomy & Astrophysics. 694, A225.

Barrault L, Bugnet LA, Mathis S, Mombarg JSG. 2025. **Exploring the probing power of γ Dor's inertial dip for core magnetism: The case of a toroidal field.** Astronomy & Astrophysics. 701, A253.

Bessila L, Deckx van Ruys A, Buriasco V, Mathis S, Bugnet LA, García RA, Mathur S. 2025. **The impact of rotation on the stochastic excitation of stellar acoustic modes in solar-like pulsators.** Astronomy & Astrophysics. 700, A25.

Gragera-Más JL, Torres Rodriguez S, Mustill AJ, Villaver E. 2025. **A kinematic history of stellar encounters with Beta Pictoris.** Astronomy & Astrophysics. 704, A237.

Mombarg JSG, Vanlaer V, Das SB, Rieutord M, Aerts C, Bugnet LA, Mathis S, Reese DR, Ballot J. 2025. **Is a 1D perturbative method sufficient for asteroseismic modelling of β Cephei pulsators? Implications for measurements of rotation and internal magnetic fields.** Astronomy & Astrophysics. 704, A336.

Pinsonneault MH, Zinn JC, Tayar J, Serenelli A, García RA, Mathur S, Vrard M, Elsworth YP, Mosser B, Stello D, Bell KJ, Bugnet LA, Corsaro E, Gaulme P, Hekker S, Hon M, Huber D, Kallinger T, Cao K, Johnson JA, Liagre B, Patton RA, Santos ÂRG, Basu S, Beck PG, Beers TC, Chaplin WJ, Cunha K, Frinchaboy PM, Girardi L, Godoy-Rivera D, Holtzman JA, Jönsson H, Mészáros S, Reyes C, Rix HW, Shetrone M, Smith VV, Spoo T, Stassun KG, Wang J. 2025. **APOKASC-3: The third joint spectroscopic and asteroseismic catalog for evolved stars in the Kepler fields.** Astrophysical Journal, Supplement Series. 276(2), 69.

Rauer H et al. 2025. **The PLATO mission.** Experimental Astronomy. 59(3), 26.

Vanlaer V, Bowman DM, Burssens S, Das SB, Bugnet LA, Mathis S, Aerts C. 2025. **Interior rotation modelling of the β Cep pulsator HD 192575 including multiplet asymmetries.** Astronomy & Astrophysics. 701, A5.

Xing Z, Torres Rodriguez S, Götberg YLL, Trani AA, Korol V, Cuadra J. 2025. **Combining REBOUND and MESA: Dynamical evolution of planets orbiting interacting binaries.** Monthly Notices of the Royal Astronomical Society. 537(1), 285–292.

Caiazzo Group

Bhat A, Bauer EB, Pakmor R, Shen KJ, Caiazzo I, Rajamuthukumar AS, El-Badry K, Kerzendorf WE. 2025. **Supernova shocks cannot explain the inflated state of hypervelocity runaways from white dwarf binaries.** Astronomy & Astrophysics. 693(1), A114.

Bhattacharjee S, Kulkarni SR, Kong AKH, Tam MS, Bond HE, El-Badry K, Caiazzo I, Chornay N, Graham MJ, Rodriguez AC, Zeimann GR, Fremling C, Drake AJ, Werner K, Rodriguez H, Prince TA, Laher RR, Chen TX, Riddle R. 2025. **Variability of central stars of planetary nebulae with the zwicky transient facility. I. Methods, short-timescale variables, and the unusual nucleus of WeSb 1.** Publications of the Astronomical Society of the Pacific. 137(2), 024201.

Bhattacharjee S, Reindl N, Bond HE, El-Badry K, Mackensen N, Chornay N, Kulkarni SR, Caiazzo I, Van Roestel J, Rodriguez AC, Prince TA, Rusholme B, Laher RR, Smith R. 2025. **Variability of central stars of planetary nebulae with the Zwicky Transient Facility. II. Long-timescale variables including wide binary and late thermal pulse candidates.** Publications of the Astronomical Society of the Pacific. 137(10), 104206.

Bhattacharjee S, Vanderbosch ZP, Hollands MA, Tremblay P-E, Xu S, Guidry JA, Hermes JJ, Caiazzo I, Rodriguez AC, van Roestel J, El-Badry K, Drake AJ, Roulston BR, Riddle R, Rusholme B, Groom SL, Smith R, Toloza O. 2025. **A ZTF search for circumstellar debris transits in White Dwarfs: Six new candidates, one with gas disk emission, identified in a novel metric space.** Publications of the Astronomical Society of the Pacific. 137(7), 074202.

Cheng S, Schlaufman KC, Caiazzo I. 2025. **A candidate giant planet companion to the massive, young White Dwarf GALEX J071816.4+373139 informs the occurrence of giant planets orbiting B stars.** The Astronomical Journal. 170(1), 47.

Cunningham T, Caiazzo I, Sienkiewicz G, Wheatley PJ, Gänsicke BT, El-Badry K, Arcodia R, Charbonneau D, Connor L, De K, Hakala P, Kenyon SJ, Maheshwari SK, Rodriguez AC, Van Roestel J, Tremblay PE. 2025. **Discovery of two new polars evolved past the period bounce.** Monthly Notices of the Royal Astronomical Society. 540(1), 633–649.

Galiullin I, Rodriguez AC, El-Badry K, Caiazzo I, Szkody P, Nagarajan P, Whitebook S. 2025. **Optical spectroscopy of the most compact accreting binary harboring a magnetic White Dwarf and a hydrogen-rich donor.** The Astrophysical Journal Letters. 990(2), L57.

Guidry JA, Vanderbosch ZP, Hermes JJ, Veras D, Hollands MA, Bhattacharjee S, Caiazzo I, El-Badry K, Kao ML, Ould Rouis LB, Rodriguez AC, Van Roestel J. 2025. **Transiting planetary debris near the Roche limit of a white dwarf on a 4.97 hr orbit—and its vanishing.** The Astrophysical Journal. 992(2), 167.

Rodriguez AC, El-Badry K, Suleimanov V, Pala AF, Kulkarni SR, Gaensicke B, Mori K, Rich RM, Sarkar A, Bao T, De Oliveira RL, Ramsay G, Szkody P, Graham M, Prince TA, Caiazzo I, Vanderbosch ZP, Roestel JV, Das KK, Qin YJ, Kasliwal MM, Wold A, Groom SL, Reiley D, Riddle R. 2025. **Cataclysmic variables and AM CVn binaries in SRG/eROSITA + Gaia: Volume limited samples, X-ray luminosity functions, and space densities.** Publications of the Astronomical Society of the Pacific. 137(1), 014201.

Rodriguez AC, El-Badry K, Hakala P, Rodríguez-Gil P, Bao T, Galiullin I, Kurlander JA, Law CJ, Pelisoli I, Schreiber MR, Burdge K, Caiazzo I, Roestel JV, Szkody P, Drake AJ, Buckley DAH, Potter SB, Gaensicke B, Mori K, Bellm EC, Kulkarni SR, Prince TA, Graham M, Kasliwal MM, Rose S, Sharma Y, Ahumada T, Anand S, Viitanen A, Wold A, Chen TX, Riddle R, Smith R. 2025. **A link between White Dwarf pulsars and polars: Multiwavelength observations of the 9.36-minute period variable Gaia22ayj.** Publications of the Astronomical Society of the Pacific. 137(2), 024202.

Scalco M, Gerasimov R, Bedin LR, Vesperini E, Correnti M, Nardiello D, Burgasser A, Richer H, Caiazzo I, Heyl J, Libralato M, Anderson J, Griggio M. 2025. **JWST photometry and astrometry of 47 Tucanae. Discontinuity in the stellar sequence at the star--brown dwarf transition.** Astronomy & Astrophysics. 694, A68.

Zu M, Desai AA, Goodrich CP. 2025. **Fully independent response in disordered solids.** Physical Review Letters. 134(23), 238201.

Chatterjee Group

Asadi A, Chatterjee K, Saona Urmeneta RJ, Shafiee A. 2025. **Limit-sure reachability for small memory policies in POMDPs is NP-complete.** The 41st Conference on Uncertainty in Artificial Intelligence. UAI: Conference on Uncertainty in Artificial Intelligence, PMLR, vol. 286, 238–247.

Asadi A, Chatterjee K, De Raaij J. 2025. **Lower bound on Howard policy iteration for deterministic Markov Decision Processes.** The 41st Conference on Uncertainty in Artificial Intelligence. UAI: Conference on Uncertainty in Artificial Intelligence, PMLR, vol. 286, 223–232.

Asadi A, Brice L, Chatterjee K, Thejaswini KS. 2025. **ε-stationary Nash equilibria in multi-player stochastic graph games. 45th Annual Conference on Foundations of Software Technology and Theoretical Computer Science.** FSTTCS: Conference on Foundations of Software Technology and Theoretical Computer Science, LIPIcs, vol. 360, 9:1–9:17.

Attia L, Oliu-Barton M, Saona Urmeneta RJ. 2025. **Marginal values of a stochastic game.** Mathematics of Operations Research. 50(1), 482–505.

Attia L, Lichev L, Mitsche D, Saona Urmeneta RJ, Ziliotto B. 2025. **Random zero-sum dynamic games on infinite directed graphs.** Dynamic Games and Applications. 15, 1517–1535.

Avarikioti Z, Bastankhah M, Maddah-Ali MA, Pietrzak KZ, Svoboda J, Yeo MX. 2025. **Route discovery in private payment channel networks.** Computer Security. ESORICS 2024 International Workshops. ESORICS: European Symposium on Research in Computer Security, LNCS, vol. 15263, 207–223.

Azeem M, Chakraborty D, Kanav S, Kretinsky J, Mohagheghi M, Mohr S, Weininger M. 2025. **1–2–3–Go! Policy synthesis for parameterized Markov decision processes via decision-tree learning and generalization. 26th International Conference on Verification, Model Checking, and Abstract Interpretation.** VMCAI: Verification, Model Checking, and Abstract Interpretation, LNCS, vol. 15530, 97–120.

Baier C, Chatterjee K, Meggendorfer T, Piribauer J. 2025. **Multiplicative rewards in Markovian models. 2025 40th Annual ACM/IEEE Symposium on Logic in Computer Science.** LICS: Logic in Computer Science, 499–512.

Brewster DA, Svoboda J, Roscow D, Chatterjee K, Tkadlec J, Nowak MA. 2025. **Maintaining diversity in structured populations.** PNAS Nexus. 4(8), pgaf252.

Brihaye T, Chatterjee K, Mohr S, Weininger M. 2025. **Risk-aware Markov decision processes using cumulative prospect theory.** 2025 40th Annual ACM/IEEE Symposium on Logic in Computer Science. LICS: Logic in Computer Science, 458–471.

Budde CE, Hartmanns A, Meggendorfer T, Weininger M, Wienhöft P. 2025. **Sound statistical model checking for probabilities and expected rewards.** 31st International Conference on Tools and Algorithms for the Construction and Analysis of Systems. TACAS: Tools and Algorithms for the Construction and Analysis of Systems, LNCS, vol. 15696, 167–190.

Chatterjee K, Goharshady E, Karrabi M, Motwani HJ, Seeliger M, Zikelic D. 2025. **Quantified linear and polynomial arithmetic satisfiability via template-based skolemization.** Proceedings of the 39th AAAI Conference on Artificial Intelligence. AAAI: Conference on Artificial Intelligence vol. 39, 11158–11166.

Chatterjee K, Luo R, Saona Urmeneta RJ, Svoboda J. 2025. **Linear equations with min and max operators: Computational complexity.** Proceedings of the 39th AAAI Conference on Artificial Intelligence. AAAI: Conference on Artificial Intelligence vol. 39, 11150–11157.

Chatterjee K, Jafariraviz M, Saona Urmeneta RJ, Svoboda J. 2025. **Value iteration with guessing for Markov chains and Markov decision processes.** 31st International Conference on Tools and Algorithms for the Construction and Analysis of Systems. TACAS: Tools and Algorithms for the Construction and Analysis of Systems, LNCS, vol. 15697, 217–236.

Chatterjee K, Quatmann T, Schäffeler M, Weininger M, Winkler T, Zilken D. 2025. **Fixed point certificates for reachability and expected rewards in MDPs.** 31st International Conference on Tools and Algorithms for the Construction and Analysis of Systems. TACAS: Tools and Algorithms for the Construction and Analysis of Systems, LNCS, vol. 15697, 130–151.

Chatterjee K, Goharshady E, Novotný P, Zikelic D. 2025. **Refuting equivalence in probabilistic programs with conditioning.** 31st International Conference on Tools and Algorithms for the Construction and Analysis of Systems. TACAS: Tools and Algorithms for the Construction and Analysis of Systems, LNCS, vol. 15697, 279–300.

Chatterjee K, Gilbert S, Schmid S, Svoboda J, Yeo MX. 2025. **When is liquid democracy possible? On the manipulation of variance.** Proceedings of the ACM Symposium on Principles of Distributed Computing. PODC: Symposium on Principles of Distributed Computing, 241–251.

Chatterjee K, Goharshady AK, Goharshady E, Karrabi M, Saadat M, Seeliger M, Zikelic D. 2025. **PolyQEnt: A polynomial quantified entailment solver.** 23rd International Symposium on Automated Technology for Verification and Analysis. ATVA: Automated Technology for Verification and Analysis, LNCS, vol. 16145, 411–424.

Chatterjee K, Doyen L, Raskin J-F, Sankur O. 2025. **The value problem for multiple-environment MDPs with parity objective.** 52nd International Colloquium on Automata, Languages, and Programming. ICALP: Automata, Languages and Programming, LIPIcs, , 150.

Giambartolomei G, Mallmann-Trenn F, Saona Urmeneta RJ. 2025. **IID prophet inequality with random horizon: Going beyond increasing hazard rates.** 52nd International Colloquium on Automata, Languages, and Programming. ICALP: Automata, Languages and Programming, LIPIcs, vol. 334.

Grobelna M, Kretinsky J, Weininger M. 2025. **Stopping criteria for value iteration on concurrent stochastic reachability and safety games.** 2025 40th Annual ACM/IEEE Symposium on Logic in Computer Science. LICS: Logic in Computer Science, 568–580.

Hübner V, Hilbe C, Staab M, Kleshnina M, Chatterjee K. 2025. **Time-dependent strategies in repeated asymmetric public goods games.** Dynamic Games and Applications. 15, 1617–1645.

Hübner V, Schmid L, Hilbe C, Chatterjee K. 2025. **Stable strategies of direct and indirect reciprocity across all social dilemmas.** PNAS Nexus. 4(5), pgaf154.

Křišťan JM, Svoboda J. 2025. **Reconfiguration using generalized token jumping.** 19th International Conference and Workshops on Algorithms and Computation. WALCOM: International Conference and Workshops on Algorithms and Computation, LNCS, vol. 15411, 244–265.

Luo R, Stich SU, Horváth S, Takáč M. 2025. **Revisiting LocalSGD and SCAFFOLD: Improved rates and missing analysis.** The 28th International Conference on Artificial Intelligence and Statistics. AISTATS: Conference on Artificial Intelligence and Statistics, PMLR, vol. 258, 2539–2547.

Mcavoy A, Sehwag UM, Hilbe C, Chatterjee K, Barfuss W, Su Q, Leonard NE, Plotkin JB. 2025. **Unilateral incentive alignment in two-agent stochastic games.** Proceedings of the National Academy of Sciences. 122(25), e2319927121.

Meggendorfer T, Weininger M, Wienhöft P. 2025. **Solving robust Markov decision processes: Generic, reliable, efficient.** Proceedings of the 39th AAAI Conference on Artificial Intelligence. AAAI: Conference on Artificial Intelligence vol. 39, 26631–26641.

Meggendorfer T, Weininger M, Wienhöft P. 2025. **What are the odds? Improving statistical model checking of Markov decision processes.** Second International Joint Conference on QEST+FORMATS. QEST-FORMATS: International Conference on Quantitative Evaluation of Systems and Formal Modeling and Analysis of Timed Systems, LNCS, vol. 16143, 195–218.

Muroya Lei S, Chatterjee K, Henzinger TA. 2025. **Hardware-optimal quantum algorithms.** Proceedings of the National Academy of Sciences. 122(12), e2419273122.

Svoboda J, Chatterjee K. 2025. **Promoters of cooperation in evolutionary games.** Proceedings of the National Academy of Sciences. 122(51), e2524109122.

Zhang Y, Wang J, Wen G, Guan J, Zhou S, Chen G, Chatterjee K, Perc M. 2025. **Limitation of time promotes cooperation in structured collaboration systems.** IEEE Transactions on Network Science and Engineering. 12(1), 4–12.

Cheng Group

Cheng B. 2025. **Latent Ewald summation for machine learning of long-range interactions.** npj Computational Materials. 11, 80.

Kim D, Wang X, Vargas S, Zhong P, King DS, Inizan TJ, Cheng B. 2025. **A universal augmentation framework for long-range electrostatics in machine learning interatomic potentials.** Journal of Chemical Theory and Computation. 21(24), 12709–12724.

King DS, Kim D, Zhong P, Cheng B. 2025. **Machine learning of charges and long-range interactions from energies and forces.** Nature Communications. 16, 8763.

King DS, Grzenda D, Zhu R, Hudson N, Foster I, Cheng B, Gagliardi L. 2025. **Cartesian equivariant representations for learning and understanding molecular orbitals.** Proceedings of the National Academy of Sciences. 122(48), e2510235122.

Tuo P, Zeng Z, Chen J, Cheng B. 2025. **Scalable multitemperature free energy sampling of classical Ising spin states.** Journal of Chemical Theory and Computation. 21(22), 11427–11435.

Wild R, Wodaczek F, Del Tatto V, Cheng B, Laio A. 2025. **Automatic feature selection and weighting in molecular systems using Differentiable Information Imbalance.** Nature Communications. 16, 270.

Zeng Z, Liang X, Fan Z, Chen Y, Simoncelli M, Cheng B. 2025. **Thermal transport of amorphous hafnia across the glass transition.** ACS Materials Letters., 2695–2701.

Zeng Z, Fan Z, Simoncelli M, Chen C, Liang T, Chen Y, Thornton G, Cheng B. 2025. **Lattice distortion leads to glassy thermal transport in crystalline $Cs_3Bi_2I_6Cl_3$.** Proceedings of the National Academy of Sciences. 122(41), e2415664122.

Zhong P, Kim D, King DS, Cheng B. 2025. **Machine learning interatomic potential can infer electrical response.** npj Computational Materials. 11, 384.

Cremer Group

Ayalon O, Rajendran H. 2025. **Interplay of asexual and sexual reproduction in bifunctional insects.** Journal of the Royal Society Interface. 22(229), 20250202.

Dawson E, Hönigsberger M, Kampleitner N, Grasse AV, Lindorfer L, Robb J, Beikzadeh F, Strahodinsky F, Leitner H, Rajendran H, Schmitt T, Cremer S. 2025. **Altruistic disease signalling in ant colonies.** Nature Communications. 16, 10511.

Csicsvari Group

Bollmann L, Baracskay P, Stella F, Csicsvari JL. 2025. **Sleep stages antagonistically modulate reactivation drift.** Neuron. 113(9), 1446–1459.e6.

Chiossi HSC, Nardin M, Tkačik G, Csicsvari JL. 2025. **Learning reshapes the hippocampal representation hierarchy.** Proceedings of the National Academy of Sciences. 122(11), e2417025122.

Kapoor L, Ruzickova N, Zivadinovic P, Leitner V, Sisak MA, Mweka CN, Dobbelaere JA, Katsaros G, Schanda P. 2025. **Quantifying the carbon footprint of conference travel: The case of NMR meetings.** Magnetic Resonance. 6(2), 243–256.

Danzl Group

Gallei MC, Truckenbrodt SM, Kreuzinger C, Inumella S, Vistunou V, Sommer CM, Tavakoli M, Agudelo Duenas N, Vorlaufer J, Jahr W, Randuch M, Johnson AJ, Benková E, Friml J, Danzl JG. 2025. **Super-resolution expansion microscopy in plant roots.** The Plant Cell. 37(4), koaf006.

Tavakoli M, Lyudchik J, Januszewski M, Vistunou V, Agudelo Duenas N, Vorlaufer J, Sommer CM, Kreuzinger C, Oliveira B, Cenameri A, Novarino G, Jain V, Danzl JG. 2025. **Light-microscopy-based connectomic reconstruction of mammalian brain tissue.** Nature. 642, 398–410.

Vorlaufer J, Semenov N, Kreuzinger C, Javoor M, Zens B, Agudelo Duenas N, Tavakoli M, Suplata M, Jahr W, Lyudchik J, Wartak A, Schur FK, Danzl JG. 2025. **Image-based 3D active sample stabilization on the nanometer scale for optical microscopy.** Biophysical Reports. 5(2), 100211.

Watson J, Vargas Barroso VM, Morse R, Navas Olivé AC, Tavakoli M, Danzl JG, Tomschik M, Rössler K, Jonas PM. 2025. **Human hippocampal CA3 uses specific functional connectivity rules for efficient associative memory.** Cell. 188(2), 501–514.e18.

De Bono Group

Artan M, Schön H, de Bono M. 2025. **Proximity labeling of DAF-16 FOXO highlights aging regulatory proteins.** Nature Communications. 16, 11355.

Jaeger ECB, Vijatovic D, Deryckere A, Zorin N, Nguyen AL, Ivanian G, Woych J, Arnold RC, Ortega Gurrola A, Shvartsman A, Barbieri F, Toma F-A, Gorbsky GJ, Horb ME, Cline HT, Shay TF, Kelley DB, Yamaguchi A, Shein-Idelson M, Tosches MA, Sweeney LB. 2025. **Adeno-associated viral tools to trace neural development and connectivity across amphibians.** Developmental Cell. 60(5), 794–812.e6.

Stratigi A, Soler-García M, Krout M, Shukla S, de Bono M, Richmond JE, Laurent P. 2025. **Neuroendocrine control of synaptic transmission by PHAC-1 in C.** elegans. Journal of Neuroscience. 45(13), e1767232024.

Edelsbrunner Group

Akopyan A, Edelsbrunner H, Virk Z, Wagner H. 2025. **Tight bounds between the Jensen–Shannon divergence and the minmax divergence.** Entropy. 27(8), 854.

Brown A, Draganov O. 2025. **Discrete microlocal Morse theory.** Journal of Pure and Applied Algebra. 229(10), 108068.

Chambers EW, Fillmore CD, Stephenson ER, Wintraecken M. 2025. **Burning or collapsing the medial axis is unstable.** La Matematica. 4, 811–828.

Edelsbrunner H, Nikitenko A. 2025. **Average and expected distortion of Voronoi paths and scapes.** Discrete & Computational Geometry. 73, 490–499.

Edelsbrunner H, Garber A, Saghafian M. 2025. **Order-2 Delaunay triangulations optimize angles.** Advances in Mathematics. 461, 110055.

Edelsbrunner H, Garber A, Saghafian M. 2025. **On spheres with k points inside.** 41st International Symposium on Computational Geometry. SoCG: Symposium on Computational Geometry, LIPIcs, vol. 332, 43.

Edelsbrunner H, Stephenson ER, Thoresen MH. 2025. **The mid-sphere cousin of the medial axis transform.** 4th International Joint Conference on Discrete Geometry and Mathematical Morphology. DGMM: Discrete Geometry and Mathematical Morphology, LNCS, vol. 16296, 133–147.

Gonzalez-Diaz R, Soriano Trigueros M, Torras-Casas A. 2025. **Additive partial matchings for persistent homology.** Proceedings of the 2025 International Symposium on Symbolic and Algebraic Computation. ISSAC: International Symposium on Symbolic and Algebraic Computation, 188–196.

Mahini M, Beigy H, Qadami S, Saghafian M. 2025. **Simplet-based signatures and approximation in simplicial complexes: Frequency, degree, and centrality.** Information Sciences. 719(11), 122425.

Ost L, Cultrera di Montesano S, Edelsbrunner H. 2025. **Banana trees for the persistence in time series experimentally.** 41st International Symposium on Computational Geometry. SoCG: Symposium on Computational Geometry, LIPIcs, vol. 332, 71.

Pach J, Saghafian M, Schnider P. 2025. **Decomposition of geometric graphs into star-forests.** Computational Geometry. 129, 102186.

Zava N. 2025. **Coarse and bi-Lipschitz embeddability of subspaces of the Gromov–Hausdorff space into Hilbert spaces.** Algebraic & Geometric Topology. 25(8), 5153–5174.

Erdős Group

Campbell AJ, Luh K, Margarint V. 2025. **Rate of convergence in multiple SLE using random matrix theory.** Random Matrices: Theory and Application. 14(1), 2450028.

Campbell AJ, Luh K, O'Rourke S, Arenas-Velilla S, Perez-Abreu V. 2025. **Extreme eigenvalues of Laplacian random matrices with Gaussian entries.** Electronic Journal of Probability. 30, 1–52.

Campbell AJ, Cipolloni G, Erdös L, Ji HC. 2025. **On the spectral edge of non-Hermitian random matrices.** The Annals of Probability. 53(6), 2256–2308.

Erdös L, Henheik SJ, Reker J, Riabov V. 2025. **Prethermalization for deformed Wigner matrices.** Annales Henri Poincare. 26, 1991–2033.

Erdös L, Henheik SJ, Kolupaiev O. 2025. **Loschmidt echo for deformed Wigner matrices.** Letters in Mathematical Physics. 115, 14.

Erdös L, Ji HC. 2025. **Density of Brown measure of free circular Brownian motion.** Documenta Mathematica. 30(2), 417–453.

Erdös L, Henheik SJ, Riabov V. 2025. **Cusp universality for correlated random matrices.** Communications in Mathematical Physics. 406(10), 253.

Henheik SJ. 2025. **Deformational rigidity of integrable metrics on the torus.** Ergodic Theory and Dynamical Systems. 45(2), 467–503.

Henheik SJ, Lauritsen AB. 2025. **Universal behavior of the BCS energy gap.** Journal of Spectral Theory. 15(1), 305–352.

Ji HC, Park J. 2025. **Tracy-Widom limit for free sum of random matrices.** The Annals of Probability. 53(1), 239–298.

Riabov V. 2025. **Mesoscopic eigenvalue statistics for Wigner-type matrices.** Annales de l'institut Henri Poincare (B) Probability and Statistics. 61(1), 129–154.

Riabov V. 2025. **Linear Eigenvalue statistics at the cusp.** Probability Theory and Related Fields. 193, 1183–1237.

Feng Group

Cao D, De Jaeger-Braet JG. 2025. **Memory of maternal temperatures: DNA methylation alterations across generations.** Plant Physiology. 197(1), kiae651.

De Jaeger-Braet JG. 2025. **Arabidopsis accessions and their difference in heat tolerance during meiosis.** Plant Physiology. 197(2), kiaf055.

De Jaeger-Braet JG, Hartmann M, Böttger L, Yang C, Hamada T, Hoth S, Feng X, Weingartner M, Schnittger A. 2025. **The recruitment of the A-type cyclin TAM to stress granules is crucial for meiotic fidelity under heat.** Science Advances. 11(32), eadr5694.

Rodriguez Solovey L, Fiedler L, Zou M, Giannini C, Monzer A, Vladimirtsev D, Randuch M, Yu Y, Gelová Z, Verstraeten I, Hajny J, Chen M, Tan S, Hörmayer L, Li L, Marques-Bueno MM, Quddoos Z, Molnar G, Kulich I, Jaillais Y, Friml J. 2025. **ABP1/ABL3-TMK1 cell-surface auxin signaling targets PIN2-mediated auxin fluxes for root gravitropism.** Cell. 188(22), 6138–6150.e17.

Song X, Zhang M, Wang TT, Duan YY, Ren J, Gao H, Fan YJ, Xia QM, Cao HX, Xie KD, Wu XM, Zhang F, Zhang SQ, Huang Y, Boualem A, Bendahmane A, Tan FQ, Guo WW. 2025. **Polyploidization leads to salt stress resilience via ethylene signaling in citrus plants.** New Phytologist. 246(1), 176–191.

Walker J, Zhang J, Liu Y, Xu S, Yu Y, Vickers M, Ouyang W, Tálas J, Dolan L, Nakajima K, Feng X. 2025. **Extensive N4 cytosine methylation is essential for Marchantia sperm function.** Cell. 188(11), 2890–2906.e14.

Zhang J, Wu D, Zhang Y, Feng X, Gao H. 2025. **DNA methylation dynamics in male germline development in Brassica Rapa.** Molecular Horticulture. 5, 16.

Fink Group

Arnold GM, Werner T, Sahu R, Kapoor L, Qiu L, Fink JM. 2025. **All-optical superconducting qubit readout.** Nature Physics. 21, 9470.

Hawaldar S, Khaire SS, Delsing P, Suri B. 2025. **On-demand single-microwave-photon source in a superconducting circuit with wideband frequency tunability.** Physical Review Applied. 23(4), 044042.

Janik M, Roux KER, Borja Espinosa CN, Sagi O, Baghdadi A, Adletzberger T, Calcaterra S, Botifoll M, Garzón Manjón A, Arbiol J, Chrastina D, Isella G, Pop IM, Katsaros G. 2025. **Strong charge-photon coupling in planar germanium enabled by granular aluminium superinductors.** Nature Communications. 16, 2103.

Kapoor L, Ruzickova N, Zivadinovic P, Leitner V, Sisak MA, Mweka CN, Dobbelaere JA, Katsaros G, Schanda P. 2025. **Quantifying the carbon footprint of conference travel: The case of NMR meetings.** Magnetic Resonance. 6(2), 243–256.

Mandal S, Maji K, Kapoor L, Sasmal S, Manni S, Jesudasan J, Raychaudhuri P, Thamizhavel A, Deshmukh MM. 2025. **Cavity based sensing of antiferromagnetic canting and nonzero-momentum spin waves in a van der Waals cavity-magnon-polariton system.** Physical Review B. 112(21), 214443.

Patel L, Hawaldar S, Panikkar A, Shankar A, Suri B. 2025. **Impedance-engineered Josephson parametric amplifier with single-step lithography.** Applied Physics Letters. 127(25), 254001.

Redchenko E, Zens M, Zemlicka M, Peruzzo M, Hassani F, Sett R, Zielinski PD, Dhar HS, Krimer DO, Rotter S, Fink JM. 2025. **Observation of collapse and revival in a superconducting atomic frequency comb.** Physical Review Letters. 134(6), 063601.

Fischer Group

Agresti A, Hieber M, Hussein A, Saal M. 2025. **The stochastic primitive equations with nonisothermal turbulent pressure.** Annals of Applied Probability. 35(1), 635–700.

Cornalba F, Fischer JL. 2025. **Multilevel Monte Carlo methods for the Dean–Kawasaki equation from fluctuating hydrodynamics.** SIAM Journal on Numerical Analysis. 63(1), 262–287.

Hensel S, Laux T. 2025. **A new varifold solution concept for mean curvature flow: Convergence of the Allen-Cahn equation and weak-strong uniqueness.** Journal of Differential Geometry. 130, 209–268.

Hurm C, Moser M. 2025. **Nonlocal-to-local convergence for a Cahn–Hilliard tumor growth model.** GAMM-Mitteilungen. 48(2), e70003.

Freunberger Group

Dutta P, Von Mentlen JM, Mondal S, Kostoglou N, Wilts BD, Freunberger SA, Zickler GA, Prehal C. 2025. **Bridging solution and solid-state mechanism: Confined quasi-solid-state conversion in Li–S batteries.** ACS Energy Letters. 10, 5722–5732.

Mondal S, Nguyen HTK, Hauschild R, Freunberger SA. 2025. **Marcus kinetics control singlet and triplet oxygen evolving from superoxide.** Nature. 646(8085), 601–605.

Stepanenko I, Huang Z, Ungur L, Bessas D, Chumakov A, Sergueev I, Büchel GE, Al-Kahtani AA, Chibotaru LF, Telser J, Arion VB. 2025. **^{187}Os nuclear resonance scattering to explore hyperfine interactions and lattice dynamics for biological applications.** Science Advances. 11(6), eads3406.

Friml Group

Babic D, Abualia R, Fiedler L, Qi L, Tellier F, Smoljan A, Rakusova H, Valošek P, Han H, Benková E, Faure JD, Friml J. 2025. **Biosynthesis of very long-chain fatty acids is required for Arabidopsis auxin-mediated embryonic and post-embryonic development.** Plant Journal. 123(3), e70396.

Chen H, Qi L, Zou M, Lu M, Kwiatkowski M, Pei Y, Jaworski K, Friml J. 2025. **TIR1-produced cAMP as a second messenger in transcriptional auxin signalling.** Nature. 640, 1011–1016.

De Roij M, Hernández García J, Das S, Borst JW, Weijers D. 2025. **ARF degradation defines a deeply conserved step in auxin response.** Nature Plants. 11, 717–724.

Gallei MC, Truckenbrodt SM, Kreuzinger C, Inumella S, Vistunou V, Sommer CM, Tavakoli M, Agudelo Duenas N, Vorlaufer J, Jahr W, Randuch M, Johnson AJ, Benková E, Friml J, Danzl JG. 2025. **Super-resolution expansion microscopy in plant roots.** The Plant Cell. 37(4), koaf006.

Guan B, Xie KX, Du XQ, Bai YX, Hao PC, Lin WH, Friml J, Xue HW. 2025. **Arabidopsis phospholipase Dζ2 facilitates vacuolar acidification and autophagy under phosphorus starvation by interacting with VATD.** Cell Reports. 44(7), 116024.

Jia G, Chen G, Zhang Z, Tian C, Wang Y, Luo J, Zhang K, Zhao X, Zhao X, Li Z, Sun L, Yang W, Guo Y, Friml J, Gong Z, Zhang J. 2025. **Ferredoxin-mediated mechanism for efficient nitrogen utilization in maize.** Nature Plants. 11, 5207.

Kurtović K, Vosolsobě S, Nedvěd D, Müller K, Dobrev P, Schmidt V, Piszczek P, Kuhn A, Smoljan A, Fisher T, Weijers D, Friml J, Bowman J, Petrášek J. 2025. **The role of indole-3-acetic acid and characterization of PIN transporters in complex streptophyte alga Chara braunii.** New Phytologist. 246(3), 1066–1083.

Monzer A, Friml J. 2025. **Historical and mechanistic perspective on ABP1-TMK1-mediated cell surface auxin signaling.** npj Science of Plants. 1(1), 2.

Osorio-Navarro C, Neira-Valenzuela G, Sierra P, Adamowski M, Toledo J, Norambuena L. 2025. **The configuration of the vacuole is driven by clathrin-mediated trafficking in root cells of Arabidopsis thaliana.** Journal of Experimental Botany. 76(10), 2700–2714.

Qi L, Friml J. 2025. **Nucleotidyl cyclase activities of TIR1/AFB auxin receptors: new insights into the mechanism of auxin signaling.** In: Cryptic Enzymes and Moonlighting Proteins. Foundations and Frontiers in Enzymology, 299–322.

Rodriguez Solovey L, Fiedler L, Zou M, Giannini C, Monzer A, Vladimirtsev D, Randuch M, Yu Y, Gelová Z, Verstraeten I, Hajny J, Chen M, Tan S, Hörmayer L, Li L, Marques-Bueno MM, Quddoos Z, Molnar G, Kulich I, Jaillais Y, Friml J. 2025. **ABP1/ABL3-TMK1 cell-surface auxin signaling targets PIN2-mediated auxin fluxes for root gravitropism.** Cell. 188(22), 6138–6150.e17.

Roychoudhry S, Sageman-Furnas K, Taylor HJ, Showpnil I, Wolverton C, Friml J, Bianco MD, Kepinski S. 2025. **Angle dependence as a unifying feature of root gravitesponse modules.** Proceedings of the National Academy of Sciences. 122(46), e2506400122.

Sheng F, Gao Y, Wang Y, Li Y, Zhang J, Zhang Z, Qin X, Zhang S, Song W, Li J, Guo Y, Friml J, Gong Z, Zhang Q, Zhang J. 2025. **Antagonistic SnRK2 and PID kinases' action on auxin transport-mediated root gravitropism.** Proceedings of the National Academy of Sciences. 122(39), e2512274122.

Tang H, Chen L, Friml J. 2025. **Auxin fluctuation and PIN polarization in moss leaf cell reprogramming.** Plant and Cell Physiology., pcaf008.

Vanneste S, Pei Y, Friml J. 2025. **Mechanisms of auxin action in plant growth and development.** Nature Reviews Molecular Cell Biology., e113018.

Wei H, Zhu H, Ying W, Janssens H, Kvasnica M, Winne J, Gao Y, Friml J, Ma Q, Tan S, Liu X, Russinova E, Sun L. 2025. **Structural insights into brassinosteroid export mediated by the Arabidopsis ABC transporter ABCB1.** Plant Communications. 6(1), 101181.

Xu F, Yu Y, Guan B, Xu T, Xu Z, Xue H. 2025. **Germin-like protein 1 interacts with proteasome regulator 1 to regulate auxin signaling by controlling Aux/IAA homeostasis.** Cell Reports. 44(8), 116056.

Zhang Y, Bao Z, Smoljan A, Liu Y, Wang H, Friml J. 2025. **Foraging for water by MIZ1-mediated antagonism between root gravitropism and hydrotropism.** Proceedings of the National Academy of Sciences. 122(20), e2427315122.

Goodrich Group

Baulin VA, Giacometti A, Fedosov DA, Ebbens S, Varela-Rosales NR, Feliu N, Chowdhury M, Hu M, Füchslin R, Dijkstra M, Mussel M, van Roij R, Xie D, Tzanov V, Zu M, Hidalgo-Caballero S, Yuan Y, Cocconi L, Ghim C-M, Cottin-Bizonne C, Miguel MC, Esplandiu MJ, Simmchen J, Parak WJ, Werner M, Gompper G, Hanczyc MM. 2025. **Intelligent soft matter: Towards embodied intelligence.** Soft Matter. (21), 4129–4145.

Hübl M, Goodrich CP. 2025. **Accessing semiaddressable self-assembly with efficient structure enumeration.** Physical Review Letters. 134(5), 058204.

Shi S, Hübl M, Grosjean GM, Goodrich CP, Waitukaitis SR. 2025. **Electrostatics overcome acoustic collapse to assemble, adapt, and activate levitated matter.** Proceedings of the National Academy of Sciences. 122(50), e2516865122.

Zu M, Desai AA, Goodrich CP. 2025. **Fully independent response in disordered solids.** Physical Review Letters. 134(23), 238201.

Guet Group

Antoney J, Kainrath S, Dubowsky JG, Ahmed FH, Kang SW, Mackie ERR, Bracho Granado G, Soares Da Costa TP, Jackson CJ, Janovjak HL. 2025. **A F420-dependent single domain chemogenetic tool for protein de-dimerization.** Journal of Molecular Biology. 437(17), 169184.

Gallemi M, Montesinos López JC, Zarevski N, Pribyl J, Skládal P, Hannezo EB, Benková E. 2025. **Dual role of pectin methyl esterase activity in the regulation of plant cell wall biophysical properties.** Frontiers in Plant Science. 16, 1612366.

Grah R, Guet CC, Tkačik G, Lagator M. 2025. **Linking molecular mechanisms to their evolutionary consequences: a primer.** Genetics. 229(2), iyae191.

Jain K, Hauschild R, Bochkareva O, Römhild R, Tkačik G, Guet CC. 2025. **Pulsatile basal gene expression as a fitness determinant in bacteria.** Proceedings of the National Academy of Sciences. 122(15), e2413709122.

Nikolic N, Pleska M, Bergmiller T, Guet CC. 2025. **A bacterial toxin-antitoxin system as a native defence element against RNA phages.** Biology Letters. 21(6), 20250080.

Götberg Group

Bodensteiner J, Shenar T, Sana H, Britavskiy N, Crowther PA, Langer N, Lennon DJ, Mahy L, Patrick LR, Villaseñor JI, Abdul-Masih M, Bowman DM, De Koter A, De Mink SE, Deshmukh K, Fabry M, Gilkis A, Götberg YLL, Holgado G, Izzard RG, Janssens S, Kalari VM, Keszthelyi Z, Kubát J, Mandel I, Maravelias G, Oskinova LM, Pauli D, Ramachandran V, Rocha DF, Renzo M, Sander AAC, Schneider FRN, Schootemeijer A, Sen K, Stoop M, Toonen S, Van Loon JT, Valli R, Vigna-Gómez A, Vink JS, Wang C, Xu XT. 2025. **Binarity at LOw Metallicity (BLOeM): Multiplicity properties of Oe and Be stars.** Astronomy & Astrophysics. 698, A38.

Britavskiy N, Mahy L, Lennon DJ, Patrick LR, Sana H, Villaseñor JI, Shenar T, Bodensteiner J, Bernini-Peron M, Berlanas SR, Bowman DM, Crowther PA, De Mink SE, Evans CJ, Götberg YLL, Holgado G, Johnston C, Keszthelyi Z, Klencki J, Langer N, Mandel I, Menon A, Moe M, Oskinova LM, Pauli D, Pawlak M, Ramachandran V, Renzo M, Sander AAC, Schneider FRN, Schootemeijer A, Sen K, Simón-Díaz S, Van Loon JT, Vink JS. 2025. **Binarity at LOw Metallicity (BLOeM): Multiplicity of early B-type supergiants in the Small Magellanic Cloud.** Astronomy & Astrophysics. 698, A40.

Hovis-Afflerbach B, Götberg YLL, Schootemeijer A, Klencki J, Strom AL, Ludwig BA, Drout MR. 2025. **The mass distribution of stars stripped in binaries: The effect of metallicity.** Astronomy & Astrophysics. 697, A239.

Patrick LR, Lennon DJ, Najarro F, Shenar T, Bodensteiner J, Sana H, Crowther PA, Britavskiy N, Langer N, Schootemeijer A, Evans CJ, Mahy L, Götberg YLL, De Mink SE, Schneider FRN, O'Grady AJG, Villaseñor JI, Bernini-Peron M, Bowman DM, De Koter A, Deshmukh K, Gilkis A, González-Torà G, Kalari VM, Őszkiny Z, Mandel I, Menon A, Moe M, Oskinova LM, Pauli D, Renzo M, Sander AAC, Sen K, Stoop M, Van Loon JT, Toonen S, Tramper F, Vink JS, Wang C. 2025. **Binarity at LOw Metallicity (BLOeM): The multiplicity properties and evolution of BAF-type supergiants.** Astronomy & Astrophysics. 698, A39.

Sana H, Shenar T, Bodensteiner J, Britavskiy N, Langer N, Lennon DJ, Mahy L, Mandel I, De Mink SE, Patrick LR, Villaseñor JI, Dirickx M, Abdul-Masih M, Almeida LA, Backs F, Berlanas SR, Bernini-Peron M, Bowman DM, Bronner VA, Crowther PA, Deshmukh K, Evans CJ, Fabry M, Gieles M, Gilkis A, González-Torà G, Gräfener G, Götberg YLL, Hawcroft C, Hénault-Brunet V, Herrero A, Holgado G, Izzard RG, De Koter A, Janssens S, Johnston C, Josiek J, Justham S, Kalari VM, Klencki J, Kubát J, Kubátová B, Lefever RR, Van Loon JT, Ludwig B, Mackey J, Maíz Apellániz J, Maravelias G, Marchant P, Mazeh T, Menon A, Moe M, Najarro F, Oskinova LM, Ovadia R, Pauli D, Pawlak M, Ramachandran V, Renzo M, Rocha DF, Sander AAC, Schneider FRN, Schootemeijer A, Schösser EC, Schürmann C, Sen K, Shahaf S, Simón-Díaz S, Van Son LAC, Stoop M, Toonen S, Tramper F, Valli R, Vigna-Gómez A, Vink JS, Wang C, Willcox R. 2025. **A high fraction of close massive binary stars at low metallicity.** Nature Astronomy. 9, 1337–1346.

Xing Z, Torres Rodriguez S, Götberg YLL, Trani AA, Korol V, Cuadra J. 2025. **Combining REBOUND and MESA: Dynamical evolution of planets orbiting interacting binaries.** Monthly Notices of the Royal Astronomical Society. 537(1), 285–292.

Haiman Group

Bertassi L, Sottocorno E, Rigamonti F, D'Orazio D, Eracleous M, Haiman Z, Dotti M. 2025. **Testing compact massive black hole binary candidates through multi-epoch spectroscopy.** Astronomy & Astrophysics. 702, A165.

Ding X, Onoue M, Silverman JD, Matsuoka Y, Izumi T, Strauss MA, Yang L, Jahnke K, Phillips CL, Treu T, Andika IT, Aoki K, Arita J, Baba S, Bosman SEI, Eilers A-C, Fujimoto S, Haiman Z, Imanishi M, Inayoshi K, Iwasawa K, Kartaltepe J, Kashikawa N, Kawaguchi T, Li J, Lee C-H, Lupi A, Schindler J-T, Schramm M, Shimasaku K, Shuntov M, Tanaka TS, Toba Y, Trakhtenbrot B, Umehata H, Vestergaard M, Wang F, Yang J. 2025. **SHELLQs-JWST unveils the host galaxies of 12 quasars at z > 6.** The Astrophysical Journal. 993(1), 91.

Hu H, Inayoshi K, Haiman Z, Ho LC, Ohsuga K. 2025. **The convergence of heavy and light seeds to overmassive black holes at cosmic dawn.** The Astrophysical Journal Letters. 983(2), L37.

Kis-Tóth Á, Haiman Z, Frei Z. 2025. **Can quasars, triggered by mergers, account for NANOGrav's stochastic gravitational wave background?** Classical and Quantum Gravity. 42(7), 075007.

Krauth LM, Davelaar J, Haiman Z, Westernacher-Schneider JR, Zrake J, MacFadyen A. 2025. **Thermal X-ray signatures in late-stage unequal-mass massive black hole binary mergers.** Monthly Notices of the Royal Astronomical Society. 543(3), 2670–2685.

Naoz S, Haiman Z, Quataert E, Holzknecht L. 2025. **Triples as links between binary Black Hole mergers, their electromagnetic counterparts, and galactic Black Holes.** The Astrophysical Journal Letters. 992(1), L12.

Onoue M, Ding X, Silverman JD, Matsuoka Y, Izumi T, Strauss MA, Ward C, Phillips CL, Ito K, Andika IT, Aoki K, Arita J, Baba S, Bieri R, Bosman SEI, Eilers AC, Fujimoto S, Habouzit M, Haiman Z, Imanishi M, Inayoshi K, Iwasawa K, Jahnke K, Kashikawa N, Kawaguchi T, Kohno K, Lee CH, Li J, Lupi A, Lyu J, Nagao T, Overzier R, Schindler JT, Schramm M, Scoggins MT, Shimasaku K, Toba Y, Trakhtenbrot B, Trebitsch M, Treu T, Umehata H, Venemans B, Vestergaard M, Volonteri M, Walter F, Wang F, Yang J, Zhang H. 2025. **A post-starburst pathway for the formation of massive galaxies and black holes at z > 6.** Nature Astronomy. 9, 1541–1552.

O'Neill D, Tiede C, D'Orazio DJ, Haiman Z, MacFadyen A. 2025. **Gravitational wave decoupling in retrograde circumbinary disks.** The Astrophysical Journal. 993(2), 206.

Silverman JD, Li J, Ding X, Onoue M, Strauss MA, Matsuoka Y, Izumi T, Jahnke K, Treu T, Volonteri M, Phillips CL, Andika IT, Aoki K, Arita J, Baba S, Bosman SEI, Eilers A-C, Fan X, Fujimoto S, Habouzit M, Haiman Z, Imanishi M, Inayoshi K, Iwasawa K, Kashikawa N, Kawaguchi T, Lee C-H, Lupi A, Nagao T, Schindler J-T, Schramm M, Shimasaku K, Toba Y, Trakhtenbrot B, Umehata H, Vestergaard M, Walter F, Wang F, Yang J. 2025. **SHELLQs–JWST perspective on the intrinsic mass relation between supermassive black holes and their host galaxies at z > 6.** The Astrophysical Journal Letters. 995(2), L67.

Sullivan J, Haiman Z, Kulkarni M, Visbal E. 2025. **Can supermassive stars form in protogalaxies due to internal Lyman-Werner feedback?** Monthly Notices of the Royal Astronomical Society. 542(2), 822–838.

Tiede C, Zrake J, Macfadyen A, Haiman Z. 2025. **Suppressed accretion onto massive black hole binaries surrounded by thin disks.** The Astrophysical Journal. 984(2), 144.

Xue LQ, Tagawa H, Haiman Z, Bartos I. 2025. **What determines the maximum mass of AGN-assisted black hole mergers?** Physical Review D. 112(6), 063034.

Hannezo Group

Andersen MS, Ulyanchenko S, Schweiger PJ, Hannezo EB, Simons BD, Jensen KB. 2025. **Spatiotemporal switches in progenitor cell fate govern upper hair follicle growth and maintenance.** Journal of Investigative Dermatology. 145(9), 2191–2202.e5.

Bartolucci G, Busiello DM, Ciarchi M, Corticelli A, Di Terlizzi I, Olmeda F, Revignas D, Schimmenti VM. 2025. **Phase behavior of Cacio e Pepe sauce.** Physics of Fluids. 37(4), 044122.

Brandstätter T, Brieger E, Brückner D, Ladurner G, Rädler JO, Broedersz CP. 2025. **Data-driven theory reveals protrusion and polarity interactions governing collision behavior of distinct motile cells.** PRX Life. 3(3), 033015.

Brückner D, Hannezo EB. 2025. **Tissue active matter: Integrating mechanics and signaling into dynamical models.** Cold Spring Harbor Perspectives in Biology. 17(4), a041653.

Fortunato IC, Brückner D, Grosser S, Nautiyal R, Rossetti L, Bosch-Padrós M, Trebicka J, Roca-Cusachs P, Sunyer R, Hannezo EB, Trepat X. 2025. **Single-cell migration along and against confined haptotactic gradients.** Nature Physics. 21, 1638–1647.

Gallemi M, Montesinos López JC, Zarevski N, Pribyl J, Skládal P, Hannezo EB, Benková E. 2025. **Dual role of pectin methyl esterase activity in the regulation of plant cell wall biophysical properties.** Frontiers in Plant Science. 16, 1612366.

Gu AA, Ucar MC, Tran P, Prindle A, Kamat NP, Steinkühler J. 2025. **Remodeling of lipid-foam prototissues by network-wide tension fluctuations induced by active particles.** Nature Communications. 16, 2026.

Jouveshomme S, Lizée M, Robin P, Bocquet L. 2025. **Multiple ionic memories in asymmetric nanochannels revealed by mem-spectrometry.** New Journal of Physics. 27(6), 065001.

Kalukula Y, Luciano M, Simanov G, Charras G, Brückner D, Gabriele S. 2025. **The actin cortex acts as a mechanical memory of morphology in confined migrating cells.** Nature Physics. 21, 1451–1461.

Martinet Q, Li YI, Aubret A, Hannezo EB, Palacci JA. 2025. **Emergent dynamics of active elastic microbeams.** Physical Review X. 15(4), 041017.

Mclaren SBP, Xue S, Ding S, Winkel AK, Baldwin O, Dwarakacherla S, Franze K, Hannezo EB, Xiong F. 2025. **Differential tissue deformability underlies fluid pressure-driven shape divergence of the avian embryonic brain and spinal cord.** Developmental Cell. 60(17), 2237–2247.e4.

Nabeel A, Karichannavar A, Palathingal S, Jhawar J, Brückner D, Raj M D, Guttal V. 2025. **Discovering stochastic dynamical equations from ecological time series data.** The American Naturalist. 205(4), E100–E117.

Lehr S, Brückner D, Minchington T, Greunz M, Merrin J, Hannezo EB, Kicheva A. 2025. **Self-organized pattern formation in the developing mouse neural tube by a temporal relay of BMP signaling.** Developmental Cell. 60(4), 567–580.

Sahu P, Monteiro-Ferreira S, Canato S, Soares RM, Sánchez-Danés A, Hannezo EB. 2025. **Mechanical control of cell fate decisions in the skin epidermis.** Nature Communications. 16, 8440.

Sorichetti V, Robin P, Palaia I, Hernandez-Armendariz A, Cuylen-Haering S, Šarić A. 2025. **Charge distribution of the coating brush drives interchromosome attraction.** PRX Life. 3(3), 033010.

Tavano S, Brückner D, Tasciyan S, Tong X, Kardos R, Schauer A, Hauschild R, Heisenberg C-PJ. 2025. **BMP-dependent patterning of ectoderm tissue material properties modulates lateral mesendoderm cell migration during early zebrafish gastrulation.** Cell Reports. 44(3), 115387.

Toquer D, Bocquet L, Robin P. 2025. **Ionic association and Wien effect in 2D confined electrolytes.** Journal of Chemical Physics. 162(6), 064703.

Ucar MC, Zane A, Alanko JH, Sixt MK, Hannezo EB. 2025. **Self-generated chemotaxis of mixed cell populations.** Proceedings of the National Academy of Sciences. 122(34), e2504064122.

Xue S, Yang Q, Liberali P, Hannezo EB. 2025. **Mechanochemical bistability of intestinal organoids enables robust morphogenesis.** Nature Physics. 21, 078104.

Hausel Group

Hausel T, Rychlewicz KP. 2025. **Spectrum of equivariant cohomology as a fixed point scheme.** Epijournal de Geometrie Algebrique. 9, 1.

Kapoor L, Ruzickova N, Zivadinovic P, Leitner V, Sisak MA, Mweka CN, Dobbelaere JA, Katsaros G, Schanda P. 2025. **Quantifying the carbon footprint of conference travel: The case of NMR meetings.** Magnetic Resonance. 6(2), 243–256.

Löwit J. 2025. **On modulo ℓ cohomology of p-adic Deligne–Lusztig varieties for GLn.** Journal of Algebra. 663(2), 81–118.

Nessonov N, Ngo NT. 2025. **Indecomposable characters of inductive limits of symmetric groups.** Representation Theory. 29(8), 256–288.

Heisenberg Group

Hofmann L, Heisenberg C-PJ. 2025. **Decoding zebrafish oogenesis: From primordial germ cell development to fertilization.** Seminars in Cell and Developmental Biology. 175, 103650.

Jikko Y, Deguchi E, Matsuda K, Hino N, Tsukiji S, Matsuda M, Terai K. 2025. **Front-biased activation of the Ras-Rab5-Rac1 loop coordinates collective cell migration.** Journal of Cell Science. 138(15), 263779.

Moriyama Y, Mitsui T, Heisenberg C-PJ. 2025. **Hoxb genes determine the timing of cell ingression by regulating cell surface fluctuations during zebrafish gastrulation.** Development. 152(12), dev204261.

Segos I, Van Eeckhoven J, Berger S, Mishra N, Lambie EJ, Conradt B. 2025. **Unequal segregation of mitochondria during asymmetric cell division contributes to cell fate divergence in sister cells in vivo.** Nature Communications. 16, 7174.

Tavano S, Brückner D, Tasciyan S, Tong X, Kardos R, Schauer A, Hauschild R, Heisenberg C-PJ. 2025. **BMP-dependent patterning of ectoderm tissue material properties modulates lateral mesendoderm cell migration during early zebrafish gastrulation.** Cell Reports. 44(3), 115387.

Henzinger Monika Group

Breitkopf T-L, Dallot J, El-Hayek A, Schmid S. 2025. **Brief announcement: Minimizing energy solves relative majority with a cubic number of states in population protocols.** Proceedings of the ACM Symposium on Principles of Distributed Computing. PODC: Symposium on Principles of Distributed Computing, 549–552.

Dhulipala L, Henzinger M, Li GZ, Liu QC, Sricharan AR, Zhu L. 2025. **Near-optimal differentially private graph algorithms via the Multidimensional AboveThreshold Mechanism.** 33rd Annual European Symposium on Algorithms. ESA: European Symposium on Algorithms, LIPIcs, vol. 351, 91.

El-Hayek A, Hanauer K, Henzinger M. 2025. **On b-matching and fully-dynamic maximum k-edge coloring.** 4th Symposium on Algorithmic Foundations of Dynamic Networks. SAND: Symposium on Algorithmic Foundations of Dynamic Networks, LIPIcs, vol. 330, 4.

El-Hayek A, Henzinger M, Li J. 2025. **Fully dynamic approximate minimum cut in subpolynomial time per operation.** Proceedings of the 2025 Annual ACM-SIAM Symposium on Discrete Algorithms. SODA: Symposium on Discrete Algorithms, 750–784.

El-Hayek A, Elsässer R, Schmid S. 2025. **An almost tight lower bound for plurality consensus with undecided state dynamics in the population protocol model.** Proceedings of the ACM Symposium on Principles of Distributed Computing. PODC: Symposium on Principles of Distributed Computing.

Goranci G, Henzinger M, Räcke H, Sricharan A. 2025. **Incremental approximate maximum flow via residual graph sparsification.** 52nd International Colloquium on Automata, Languages, and Programming. ICALP: Automata, Languages and Programming, LIPIcs, vol. 334, 91:1-91:20.

Henzinger M, Upadhyay J. 2025. **Improved differentially private continual observation using group algebra.** Proceedings of the 2025 Annual ACM-SIAM Symposium on Discrete Algorithms. SODA: Symposium on Discrete Algorithms vol. 5, 2951–2970.

Henzinger M, Sricharan AR, Steiner TA. 2025. **Differentially private continual release of histograms and related queries.** The 28th International Conference on Artificial Intelligence and Statistics. AISTATS: Conference on Artificial Intelligence and Statistics, PMLR, vol. 258, 1990–1998.

Henzinger M, Safavi Hemami R. 2025. **Securing dynamic data: A primer on differentially private data structures.** 33rd Annual European Symposium on Algorithms. ESA: European Symposium on Algorithms, LIPIcs, vol. 351, 2.

Henzinger M, Kosinas E, Münk R, Räcke H. 2025. **Efficient contractions of dynamic graphs - with applications.** 33rd Annual European Symposium on Algorithms. ESA: European Symposium on Algorithms vol. 351, 36.

Safavi Hemami R, Seybold MP. 2025. **B-Treaps revised: Write efficient randomized block search trees with high load.** 19th International Symposium on Algorithms and Data Structures. WADS: Algorithms and Data Structures Symposium, LIPIcs, vol. 349, 47.

Scott JA, Lampert C, Saulpic D. 2025. **Differentially private federated k-means clustering with server-side data.** 42nd International Conference on Machine Learning. ICML: International Conference on Machine Learning, PMLR, vol. 267, 53757–53790.

Zheng DW, Henzinger M. 2025. **Multiplicative auction algorithm for approximate maximum weight bipartite matching.** Mathematical Programming. 210, 881–894.

Henzinger Thomas Group

Bartocci E, Ferrere T, Henzinger TA, Nickovic D, Oliveira da Costa A. 2025. **Information-flow interfaces.** Formal Methods in System Design. 66, 3–48.

Bartocci E, Henzinger TA, Nickovic D, Oliveira da Costa A. 2025. **Information-Flow Interfaces and Security Lattices.** In: Engineering Safe and Trustworthy Cyber Physical Systems. LNCS, vol. 15471, 251–263.

Bartocci E, Chalupa M, Henzinger TA, Nickovic D, Oliveira da Costa A. 2025. **Hypernode automata.** Acta Informatica. 62(4), 43.

Boker U, Henzinger TA, Mazzocchi NA, Sarac NE. 2025. **Safety and liveness of quantitative properties and automata.** Logical Methods in Computer Science. 21(2), 13149.

Brice L, Henzinger TA, Thejaswini KS. 2025. **Finding equilibria: Simpler for pessimists, simplest for optimists.** 50th International Symposium on Mathematical Foundations of Computer Science. MFCS: Mathematical Foundations of Computer Science, LIPIcs, vol. 345, 30.

Cano Cordoba F, Henzinger TA, Könighofer B, Kueffner K, Mallik K. 2025. **Fairness shields: Safeguarding against biased decision makers.** Proceedings of the 39th AAAI Conference on Artificial Intelligence. AAAI: Conference on Artificial Intelligence vol. 39, 15659–15668.

Cano Cordoba F, Henzinger TA, Kueffner K. 2025. **Algorithmic fairness: A runtime perspective.** 25th International Conference on Runtime Verification. RV: Runtime Verification, LNCS, vol. 16087, 1–21.

Chalupa M, Mühlböck F, Muroya Lei S, Henzinger TA. 2025. **VAMOS: Middleware for best-effort third-party monitoring.** Science of Computer Programming. 240(2), 103212.

Chalupa M, Richter C. 2025. **BUBAAK: Dynamic cooperative verification.** 31st International Conference on Tools and Algorithms for the Construction and Analysis of Systems. TACAS: Tools and Algorithms for the Construction and Analysis of Systems, LNCS, vol. 15698, 212–216.

Chalupa M, Henzinger TA, Mazzocchi NA, Sarac NE. 2025. **Automating the analysis of quantitative automata with QuAK.** 31st International Conference on Tools and Algorithms for the Construction and Analysis of Systems. , LNCS, vol. 15696, 303–312.

Chalupa M, Henzinger TA, Oliveira da Costa AA. 2025. **Flavors of quantifiers in hyperlogics.** 45th Annual Conference on Foundations of Software Technology and Theoretical Computer Science. FSTTCS: Conference on Foundations of Software Technology and Theoretical Computer Science, LIPIcs, vol. 360, 20:1-20:18.

Chalupa M, Henzinger TA, Oliveira da Costa AA. 2025. **Monitoring hypernode logic over infinite domains.** 25th International Conference on Runtime Verification. RV: Runtime Verification, LNCS, vol. 16087, 417–437.

Froleyks N, Yu E, Preiner M, Biere A, Heljanko K. 2025. **Introducing certificates to the hardware model checking competition.** 37th International Conference on Computer Aided Verification. CAV: Computer Aided Verification, LNCS, vol. 15931, 281–295.

Gupta A, Henzinger TA, Kueffner K, Mallik K, Pape D. 2025. **Monitoring robustness and individual fairness.** Proceedings of the 31st ACM SIGKDD Conference on Knowledge Discovery and Data Mining. KDD: Conference on Knowledge Discovery and Data Mining vol. 2, 790–801.

Henzinger TA, Mallik K, Sadeghi P, Zikelic D. 2025. **Supermartingale certificates for quantitative omega-regular verification and control.** 37th International Conference on Computer Aided Verification. CAV: Computer Aided Verification, LNCS, vol. 15932, 29–55.

Henzinger TA, Kebis P, Mazzocchi NA, Sarac NE. 2025. **Quantitative language automata.** 36th International Conference on Concurrency Theory. CONCUR: Conference on Concurrency Theory, LIPIcs, vol. 348, 21.

Henzinger TA, Kresse F, Mallik K, Yu E, Zikelic D. 2025. **Predictive monitoring of black-box dynamical systems.** 7th Annual Learning for Dynamics & Control Conference. L4DC: Learning for Dynamics & Control, PMLR, vol. 283, 804–816.

Henzinger TA, Prakash A, Thejaswini KS. 2025. **Resolving nondeterminism with randomness.** 50th International Symposium on Mathematical Foundations of Computer Science. MFCS: Mathematical Foundations of Computer Science, LIPIcs, vol. 345, 57.

Henzinger TA, Karimi M, Thejaswini KS. 2025. **Privacy-preserving runtime verification.** Proceedings of the 2025 ACM SIGSAC Conference on Computer and Communications Security. CCS: Conference on Computer and Communications Security, 2774–2787.

Henzinger TA, Kueffner K, Yu E. 2025. **Formal verification of neural certificates done dynamically.** 25th International Conference on Runtime Verification. RV: Runtime Verification, LNCS, vol. 16087, 54–72.

Henzinger TA, Kueffner K, Singh V, Sun I. 2025. **Alignment monitoring.** 25th International Conference on Runtime Verification. RV: Runtime Verification, LNCS, vol. 16087, 140–159.

Hsu TH, Oliveira da Costa AA, Wintenberg A, Bartocci E, Bonakdarpour B. 2025. **Gray-box runtime enforcement of hyperproperties.** Acta Informatica. 62(3), 30.

Kresse F, Yu E, Lampert C, Henzinger TA. 2025. **Logic gate neural networks are good for verification.** 2nd International Conference on Neuro-Symbolic Systems. NeuS: International Conference on Neuro-Symbolic Systems, PMLR, vol. 288, 26.

Muroya Lei S, Chatterjee K, Henzinger TA. 2025. **Hardware-optimal quantum algorithms.** Proceedings of the National Academy of Sciences. 122(12), e2419273122.

Pastva S, Park KH, Huvar O, Rozum JC, Albert R. 2025. **An open problem: Why are motif-avoidant attractors so rare in asynchronous Boolean networks?** Journal of Mathematical Biology. 91, 11.

Richter C, Chalupa M, Jakobs M-C, Wehrheim H. 2025. **Cooperative software verification via dynamic program splitting.** 47th International Conference on Software Engineering. ICSE: International Conference on Software Engineering, 2087–2099.

Trinh VG, Park KH, Pastva S, Rozum JC. 2025. **Mapping the attractor landscape of Boolean networks with biobalm.** Bioinformatics. 41(5), btaf280.

Yu E, Zikelic D, Henzinger TA. 2025. **Neural control and certificate repair via runtime monitoring.** Proceedings of the 39th AAAI Conference on Artificial Intelligence. AAAI: Conference on Artificial Intelligence vol. 39, 26409–26417.

Hetzer Group

Hetzer M, Toda T. 2025. **Long-lived cellular molecules in the brain.** Trends in Neurosciences. 48(9), 645–654.

Kuhn KD, Cho UH, Hetzer M. 2025. **PSME3 regulates migration and differentiation of myoblasts.** Life Science Alliance. 8(9), e202503208.

Higginbotham Group

Mukhopadhyay S, Lancheros Naranjo DA, Senior JL, Higginbotham AP. 2025. **Dual relaxation oscillations in a Josephson-junction array.** Physical Review Applied. 24, 014035.

Puglia D, Odessey RH, Burns P, Luhmann N, Schmid S, Higginbotham AP. 2025. **Room temperature, cavity-free capacitive strong coupling to mechanical motion.** Nano Letters. 25(7), 2749–2755.

Hippenmeyer Group

Bose M, Suresh V, Mishra U, Talwar I, Yadav A, Biswas S, Hippenmeyer S, Tole S. 2025. **Dual role of FOXG1 in regulating gliogenesis in the developing neocortex via the FGF signalling pathway.** eLife. 13, 101851.

Cheung GT, Pauler F, Hippenmeyer S. 2025. **Probing Cell-Type Specificity of Mutant Phenotype at Transcriptomic Level Using Mosaic Analysis with Double Markers (MADM).** In: Lineage Tracing. Methods in Molecular Biology, vol. 2886, 139–151.

Gao X, Li J-L, Chen X, Ci B, Chen F, Lu N, Shen B, Zheng L, Jia J-M, Yi Y, Zhang S, Shi Y-C, Shi K, Propson NE, Huang Y, Poinsatte K, Zhang Z, Yue Y, Bosco DB, Lu Y, Yang S, Adams RH, Lindner V, Huang F, Wu L-J, Zheng H, Han F, Hippenmeyer S, Stowe AM, Peng B, Margeta M, Wang X, Liu Q, Körbelin J, Trepel M, Lu H, Zhou BO, Zhao H, Su W, Bachoo RM, Ge W. 2025. **Reduction of neuronal activity mediated by blood-vessel regression in the brain.** Nature Communications. 16, 5840.

Pipicelli F, Villalba Requena A, Hippenmeyer S. 2025. **How radial glia progenitor lineages generate cell-type diversity in the developing cerebral cortex.** Current Opinion in Neurobiology. 93, 103046.

Yotova I, Proestling K, Pauler F, Rainer L, Kaup L, Heine J, Sandrieser L, Wenzl R, Hudson QJ. 2025. **LINC01638 promotes epithelial-to-mesenchymal transition in endometriosis epithelial cells by up-regulating RHOB via HDAC1 suppression.** Reproductive Biomedicine Online. 51(3), 104942.

Hof Group

De Leo A, Brizzolara S, Cavaiola M, He J, Stocchino A. 2025. **Rigid fibre transport in a periodic non-homogeneous geophysical turbulent flow.** Journal of Fluid Mechanics. 1011, A5.

Khatoon B, Chaudhary VK, Kamil S, Hasan SU, Alam MS. 2025. **Enhanced mass transfer in microgeometry using pulsating velocity inputs: Hydrodynamic analysis and numerical simulation.** Physics of Fluids. 37(12), 122012.

Neamtu-Halic MM, Brizzolara S, Haller G, Holzner M. 2025. **Unsupervised extraction of rotational Lagrangian coherent structures.** Computers & Fluids. 290, 106558.

Parrella F, Brizzolara S, Holzner M, Mitrano DM. 2025. **Microplastics settling in turbid water: Impacts of sediments-induced flow patterns on particle deposition rates.** Environmental Science and Technology. 59(4), 2257–2265.

Petrova E, Ljubotina M, Yalniz G, Serbyn M. 2025. **Finding periodic orbits in projected quantum many-body dynamics.** PRX Quantum. 6(4), 040333.

Vasudevan M, Paranjape CS, Sitte MP, Yalniz G, Hof B. 2025. **Aging and memory of transitional turbulence.** Nature Communications. 16, 8447.

Wang B, Ayats López R, Deguchi K, Meseguer A, Mellibovsky F. 2025. **Feigenbaum universality in subcritical Taylor-Couette flow.** Journal of Fluid Mechanics. 1010, A36.

Wang B, Ayats López R, Deguchi K, Meseguer A, Mellibovsky F. 2025. **Mathematically established chaos and forecast of statistics with recurrent patterns in Taylor-Couette flow.** Journal of Fluid Mechanics. 1011, R2.

Hosten Group

Abdalla A et al. 2025. **Terrestrial Very-Long-Baseline Atom Interferometry: Summary of the second workshop.** EPJ Quantum Technology. 12, 42.

Kun D, Strömberg KT, Spagnolo M, Dakić B, Rozema LA, Walther P. 2025. **Direct and efficient detection of quantum superposition.** Physical Review A. 111(5), L050402.

Seabrook H, Lavie E, Strömberg KT, Stafford MP, Rubino G. 2025. **Surpassing the loss-noise robustness trade-off in quantum key distribution.** Physical Review Applied. 24(2), 024072.

Ibáñez Group

Hasler R, Livio PA, Bozdogan A, Fossati S, Hageneder S, Montes-García V, Movilli J, Moazzenzade T, Loohuis L, Reiner-Rozman C, Tamayo A, Fiedler C, Ibáñez M, Kleber C, Huskens J, Dostalek J, Samori P, Knoll W. 2025. **Dual electronic and optical monitoring of biointerfaces by a grating-structured coplanar-gated field-effect transistor.** IEEE Sensors Journal. 25(7), 10521–10529.

Ibáñez M, Boehme SC, Buonsanti R, De Roo J, Milliron DJ, Ithurria S, Rogach AL, Cabot A, Yarema M, Cossairt BM, Reiss P, Talapin DV, Protesescu L, Hens Z, Infante I, Bodnarchuk MI, Ye X, Wang Y, Zhang H, Lhuillier E, Klimov VI, Utzat H, Rainò G, Kagan CR, Cargnello M, Son JS, Kovalenko MV. 2025. **Prospects of nanoscience with nanocrystals: 2025 edition.** ACS Nano. 19(36), 31969–32051.

Jia S, Qi C, Xu S, Yang L, Sun Q. 2025. **Advancements of thermoelectric nanomaterials in ROS-mediated broad-spectrum antibacterial therapies for wound healing.** Journal of Materials Science and Technology. 225(08), 212–226.

Jiyane N, Santana Santos C, Echevarria Poza I, Palacios Corella M, Abdillah Mahbub MA, Marin-Tajadura G, Quast T, Ibáñez M, Ventosa E, Schuhmann W. 2025. **Recessed microelectrodes as a platform to investigate the intrinsic redox process of Prussian blue analogs for energy storage application.** Batteries & Supercaps. 8(3), e202400743.

Jiyane N, Santana Santos C, Echevarria Poza I, Palacios Corella M, Abdillah Mahbub MA, Marin-Tajadura G, Quast T, Ibáñez M, Ventosa E, Schuhmann W. 2025. **Cover Feature: Recessed microelectrodes as a platform to investigate the intrinsic redox process of Prussian blue analogs for energy storage application,** Wiley,p.

Lee S, Balazs D, Horta S, Rayaroth Puthiyaveettil A, Ibáñez M. 2025. **Reaction precursor-mediated formation of stable supercrystals in colloidal nanocrystal synthesis: PbTe case.** Proceedings of the MATSUS Spring 2025 Conference. MATSUS: Materials for Sustainable Development Conference, 173.

Li J, Zeng G, Horta S, Martínez-Alanis PR, Jacas Biendicho J, Ibáñez M, Xu B, Ci L, Cabot A, Sun Q. 2025. **Crystallographic engineering in micron-sized SiOx anode material toward stable high-energy-density Lithium-Ion batteries.** ACS Nano. 19(16), 16096–16109.

Liu Y, Kleinhanns T, Horta S, Dutkiewicz E, Lu S, Spadaro MC, Genç A, Chen L, Lim KH, Hong M, Arbiol J, Ibáñez M. 2025. **Liquid-solid interface reactions drive enhanced thermoelectric performance in Ag2Se.** Journal of the American Chemical Society. 147(35), 32199–32208.

Lorenc D, Volosniev A, Zhumekenov AA, Lee S, Ibáñez M, Bakr OM, Lemeshko M, Alpichshev Z. 2025. **Observation of analogue dynamic Schwinger effect and non-perturbative light sensing in lead halide perovskites.** ACS Photonics. 12(9), 5220–5230.

Ma H, Pu S, Jia S, Xu S, Yu Q, Yang L, Wu H, Sun Q. 2025. **Laser-assisted thermoelectric-enhanced hydrogen peroxide biosensors based on Ag2Se nanofilms for sensitive detection of bacterial pathogens.** Nanoscale. 17(10), 5858–5868.

Mahato N, Singh S, Sreekanth TVM, Yoo K, Kim J. 2025. **In-situ engineered highly-crystalline Polythiophene empowered electrochemical capacitor-II: Anomalous electrochemical charge storage behavior of Polythiophene-rGO composite.** Materials Letters. 382, 137869.

Mandal S, Maji K, Kapoor L, Sasmal S, Manni S, Jesudasan J, Raychaudhuri P, Thamizhavel A, Deshmukh MM. 2025. **Cavity based sensing of antiferromagnetic canting and nonzero-momentum spin waves in a van der Waals cavity-magnon-polariton system.** Physical Review B. 112(21), 214443.

Mejia-Centeno KV, Montaña-Mora G, Chacón-Borrero J, Xue Q, Gong L, Martí-Sánchez S, Berlanga-Vázquez A, Llorca J, Ibáñez M, Arbiol J, Qi X, Martinez-Alanis PR, Cabot A. 2025. **Glucose electrooxidation with simultaneous H2 production on nickel-zinc electrocatalysts derived from an ethylenediamine-functionalized zeolitic imidazole framework.** Chemical Engineering Journal. 515, 163491.

Meng W, Xu L, Lu S, Li M, Li M, Zhang Y, Wang Q, Wang WJ, Huo S, Bañares MA, Martin-Gonzalez M, Ibáñez M, Cabot A, Hong M, Liu Y, Lim KH. 2025. **Thiol-Amine complexes for the synthesis and surface engineering of SnTe nanomaterials toward high thermoelectric performance.** ACS Nano. 19(38), 34395–34407.

Negi P, He B, Ukolov D, Horta S, Maji K, Mao N, Peshcherenko N, Yanda P, Yao M, Dutta M, Robredo I, Iraola M, Vergniory MG, Lemmens P, Zhang Y, Shekhar C, Ibáñez M, Felser C, Roychowdhury S. 2025. **Evidence of ferroelectric distortions in topological crystalline insulators via transverse thermoelectric measurements.** Journal of the American Chemical Society. 147(22), 18704–18711.

Palacios Corella M, Echevarría I, Santana Santos C, Schuhmann W, Ventosa E, Ibáñez M. 2025. **Prussian blue analogues as anode materials for battery applications: Complexities and horizons.** Chemistry of Materials. 37(12), 4203–4226.

Rayaroth Puthiyaveettil A, Fiedler C, Ibáñez M. 2025. **Let us FIGURE it out: Why do scientists still make "bad" figures?** ACS Materials Au. 5(3), 438–440.

Reichholf N, Horta S, Van Der Heggen D, Seno C, Pulparayil Mathew J, Ibáñez M, Smet PF, De Roo J. 2025. **Identification and elimination of surface emission in lanthanide (Co)doped zirconia nanocrystals.** ACS Nano. 19(33), 30371–30382.

Shu H, Zhao M, Lu S, Wan S, Genç A, Huang L, Ibáñez M, Lim KH, Hong M, Liu Y. 2025. **Influence of surface engineering on the transport properties of lead sulfide nanomaterials.** Journal of Colloid and Interface Science. 683, 703–712.

Singh S, Provino A, Pallecchi I, Caglieris F, Mödlinger M, Mele P, Latronico G, Takeuchi T, Manfrinetti P. 2025. **The new PrNi6Si6 intermetallic: From crystal structure to thermal and electrical transport properties across a wide temperature range (2–900 K).** Journal of Materials Science. 60, 100051.

Verma M, Kumar A, Thakur VK, Maurya A, Kumar S, Singh S, Srivastav SK. 2025. **Efficient and rapid sunlight-driven photocatalytic degradation of methylene blue dye using multiferroic BiFe03 nanoparticles.** Journal of Sol-Gel Science and Technology. 113, 356–373.

Xiao S, Zhao M, Li M, Wan S, Genç A, Huang L, Chen L, Zhang Y, Ibáñez M, Lim KH, Hong M, Liu Y, Cabot A. 2025. **Band and defect engineering in solution-processed nanocrystal building blocks to promote transport properties in nanomaterials: The case of thermoelectric Cu_3SbSe_4.** Nano Research. 18(1), 94907072.

Xu S, Horta S, Lawal AQ, Maji K, Lorion M, Ibáñez M. 2025. **Interfacial bonding enhances thermoelectric cooling in 3D-printed materials.** Science. 387(6736), 845–850.

Zeng G, Sun Q, Horta S, Martínez-Alanis PR, Wu P, Li J, Wang S, Ibáñez M, Tian Y, Ci L, Cabot A. 2025. **Modulating the solvation structure to enhance amorphous solid electrolyte interface formation for ultra-stable aqueous zinc anode.** Energy and Environmental Science. 18(4), 1683–1695.

Zhao X, Li M, Jia M, Fiedler C, Nan B, Yang D, Li L, Yuan Z, Song H, Liu Y, Ibáñez M, Wang Z, Shan C, Cabot A. 2025. **Low-dimensional structure modulation in Ag8SnSe6 for enhanced thermoelectric performance.** Advanced Functional Materials. 35(24), 2421449.

Jonas Group

Greger IH, Watson J. 2025. **'Mini analysis' misrepresents changes in synaptic properties due to incomplete event detection.** Journal of Physiology. 603(22), 7189–7205.

Lichter K. 2025. **Kiss, shrink, run.** Science. 390(6770), 236–237.

Maslarova A, Shin JN, Navas Olivé AC, Vöröslakos M, Hamer H, Doerfler A, Henin S, Buzsáki G, Liu A. 2025. **Spatiotemporal patterns differentiate hippocampal sharp-wave ripples from interictal epileptiform discharges in mice and humans.** Nature Communications. 16, 11636.

Watson J, Vargas Barroso VM, Morse R, Navas Olivé AC, Tavakoli M, Danzl JG, Tomschik M, Rössler K, Jonas PM. 2025. **Human hippocampal CA3 uses specific functional connectivity rules for efficient associative memory.** Cell. 188(2), 501–514.e18.

Watson J, Vargas Barroso VM, Jonas PM. 2025. **Cell-specific wiring routes information flow through hippocampal CA3.** Cell Reports. 44(8), 116080.

Jösch Group

Vega Zuniga TA, Sumser AL, Symonova O, Koppensteiner P, Schmidt F, Jösch MA. 2025. **A thalamic hub-and-spoke network enables visual perception during action by coordinating visuomotor dynamics.** Nature Neuroscience. 28, 7278.

Kaloshin Group

Helfter M. 2025. **Scales.** Mathematische Zeitschrift. 310, 15.

Tsodikovich D. 2025. **Local rigidity for symplectic billiards.** Journal of Geometric Analysis. 35(10), 306.

Katsaros Group

Aggarwal K, Rolandi A, Yang Y, Hickie J, Jirovec D, Ballabio A, Chrastina D, Isella G, Mitchison MT, Perarnau-Llobet M, Ares N. 2025. **Rapid optimal work extraction from a quantum-dot information engine.** Physical Review Research. 7(3), L032017.

Janik M, Roux KER, Borja Espinosa CN, Sagi O, Baghdadi A, Adletzberger T, Calcaterra S, Botifoll M, Garzón Manjón A, Arbiol J, Chrastina D, Isella G, Pop IM, Katsaros G. 2025. **Strong charge-photon coupling in planar germanium enabled by granular aluminium superinductors.** Nature Communications. 16, 2103.

Kapoor L, Ruzickova N, Zivadinovic P, Leitner V, Sisak MA, Mweka CN, Dobbelaere JA, Katsaros G, Schanda P. 2025. **Quantifying the carbon footprint of conference travel: The case of NMR meetings.** Magnetic Resonance. 6(2), 243–256.

Saez Mollejo J, Jirovec D, Schell YA, Kukucka J, Calcaterra S, Chrastina D, Isella G, Rimbach-Russ M, Bosco S, Katsaros G. 2025. **Exchange anisotropies in microwave-driven singlet-triplet qubits.** Nature Communications. 16, 3862.

Valentini M, Souto RS, Borovkov M, Krogstrup P, Meir Y, Leijnse M, Danon J, Katsaros G. 2025. **Subgap transport in superconductor-semiconductor hybrid islands: Weak and strong coupling regimes.** Physical Review Research. 7(2), 023022.

Van Straaten B, Fedele F, Vigneau F, Hickie J, Jirovec D, Ballabio A, Chrastina D, Isella G, Katsaros G, Ares N. 2025. **All-rf-based coarse-tuning algorithm for quantum devices using machine learning.** Physical Review Applied. 24(5), 054030.

Wadhia V, Meier F, Fedele F, Silva R, Nurgalieva N, Craig DL, Jirovec D, Saez Mollejo J, Ballabio A, Chrastina D, Isella G, Huber M, Mitchison MT, Erker P, Ares N. 2025. **Entropic costs of extracting classical ticks from a quantum clock.** Physical Review Letters. 135(20), 200407.

Kicheva Group

Lehr S, Brückner D, Minchington T, Greunz M, Merrin J, Hannezo EB, Kicheva A. 2025. **Self-organized pattern formation in the developing mouse neural tube by a temporal relay of BMP signaling.** Developmental Cell. 60(4), 567–580.

Klajn Group

Scacchi A, Rigoni C, Haataja M, Timonen JVI, Sammalkorpi M. 2025. **A coarse-grained model for aqueous two-phase systems: Application to ferrofluids.** Journal of Colloid and Interface Science. 686, 1135–1146.

Sheng J, Van Beek CLF, Stindt CN, Danowski W, Jankowska J, Crespi S, Pooler DRS, Hilbers MF, Buma WJ, Feringa BL. 2025. **General strategy for boosting the performance of speed-tunable rotary molecular motors with visible light.** Science Advances. 11(8), eadr9326.

Kolmogorov Group

Dvorak M, Kolmogorov V. 2025. **Generalized minimum 0-extension problem and discrete convexity.** Mathematical Programming. 209, 279–322.

Harris DG, Kolmogorov V. 2025. **Parameter estimation for Gibbs distributions.** ACM Transactions on Algorithms. 21(1), 3.

Harris DG, Iliopoulos F, Kolmogorov V. 2025. **A new notion of commutativity for the algorithmic Lovász Local Lemma.** Theory of Computing. 21(5), 1–34.

Kolmogorov V. 2025. **A simpler and parallelizable O(√log n)-approximation algorithm for SPARSEST CUT.** ACM Transactions on Algorithms. 21(4), 1–22.

Kolmogorov V, Naldi S, Zapata J. 2025. **Certifying solutions of degenerate semidefinite programs.** SIAM Journal on Optimization. 35(3), 1630–1654.

Kondrashov Group

Jain K, Hauschild R, Bochkareva O, Römhild R, Tkačik G, Guet CC. 2025. **Pulsatile basal gene expression as a fitness determinant in bacteria.** Proceedings of the National Academy of Sciences. 122(15), e2413709122.

Kwan Group

Alon Y, Anastos M. 2025. **The completion numbers of hamiltonicity and pancyclicity in random graphs.** Random Structures and Algorithms. 66(2), e21286.

Anastos M, Boyadzhiyska S, Rathke S, Rué J. 2025. **On the chromatic number of powers of subdivisions of graphs.** Discrete Applied Mathematics. 360, 506–511.

Anastos M, Jin Z, Kwan MA, Sudakov B. 2025. **Extremal, enumerative and probabilistic results on ordered hypergraph matchings.** Forum of Mathematics, Sigma. 13, e55.

Anastos M, Morris P. 2025. **A note on finding large transversals efficiently.** Journal of Combinatorial Designs. 33(9), 338–342.

Anastos M, Kwan MA, Moore B. 2025. **Smoothed analysis for graph isomorphism.** Proceedings of the 57th Annual ACM Symposium on Theory of Computing. STOC: Symposium on Theory of Computing, 2098–2106.

Attia L, Lichev L, Mitsche D, Saona Urmeneta RJ, Ziliotto B. 2025. **Random zero-sum dynamic games on infinite directed graphs.** Dynamic Games and Applications. 15, 1517–1535.

Brunck FR, Kwan MA. 2025. **Books, Hallways, and social butterflies: A note on sliding block puzzles.** Mathematical Intelligencer. 47, 52–65.

Burova S, Lichev L. 2025. **The semi-random tree process.** European Journal of Combinatorics. 126, 104120.

Carbonero A, Koerts H, Moore B, Spirkl S. 2025. **On heroes in digraphs with forbidden induced forests.** European Journal of Combinatorics. 125, 104104.

Christoph M, Petrova KH, Steiner R. 2025. **A note on digraph splitting.** Combinatorics Probability and Computing. 34(4), 559–564.

Cortés PP, Kumar P, Moore B, Ossona de Mendez P, Quiroz DA. 2025. **Subchromatic numbers of powers of graphs with excluded minors.** Discrete Mathematics. 348(4), 114377.

Draganić N, Petrova KH. 2025. **Size-Ramsey numbers of graphs with maximum degree three.** Journal of the London Mathematical Society. 111(3), e70116.

Dvořák Z, Moore B, Seifrtová M, Šámal R. 2025. **Precoloring extension in planar near-Eulerian-triangulations.** European Journal of Combinatorics. 127, 104138.

Glasgow M, Kwan MA, Sah A, Sawhney M. 2025. **A central limit theorem for the matching number of a sparse random graph.** Journal of the London Mathematical Society. 111(4), e70101.

Jain V, Kwan MA, Mubayi D, Tran T. 2025. **The edge-statistics conjecture for hypergraphs.** International Mathematics Research Notices. 2025(18), rnaf273.

Lichev L, Schapira B. 2025. **Color-avoiding percolation on the Erdős–Rényi random graph.** Annales Henri Lebesgue. 8, 35–65.

Lill J, Petrova KH, Weber S. 2025. **Linear-time MaxCut in multigraphs parameterized above the Poljak-Turzík bound.** Algorithmica. 87, 983–1007.

Mies S, Moore B, Smith-Roberge E. 2025. **Beyond the pseudoforest strong Nine Dragon Tree theorem.** European Journal of Combinatorics. 130(12), 104214.

Lampert Group

Henzinger TA, Kresse F, Mallik K, Yu E, Zikelic D. 2025. **Predictive monitoring of black-box dynamical systems. 7th Annual Learning for Dynamics & Control Conference.** L4DC: Learning for Dynamics & Control, PMLR, vol. 283, 804–816.

Kalinin N, Steinberger L. 2025. **Efficient estimation of a Gaussian mean with local differential privacy.** Proceedings of the 28th International Conference on Artificial Intelligence and Statistics. AISTATS: Conference on Artificial Intelligence and Statistics, PMLR, vol. 258, 118–126.

Kresse F, Yu E, Lampert C, Henzinger TA. 2025. **Logic gate neural networks are good for verification. 2nd International Conference on Neuro-Symbolic Systems.** NeuS: International Conference on Neuro-Symbolic Systems, PMLR, vol. 288, 26.

Prach B, Lampert C. 2025. **Intriguing properties of robust classification.** 2025 IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops. CVPR: Conference on Computer Vision and Pattern Recognition, 660–669.

Scott JA, Lampert C, Saulpic D. 2025. **Differentially private federated k-means clustering with server-side data.** 42nd International Conference on Machine Learning. ICML: International Conference on Machine Learning, PMLR, vol. 267, 53757–53790.

Súkeník P, Lampert C. 2025. **Generalization in multi-objective machine learning.** Neural Computing and Applications. 37, 24669–24683.

Lemeshko Group

Al Hyder R, Lemeshko M, Cappellaro A. 2025. **Quantum transport in the presence of a chiral molecular potential.** The Journal of Chemical Physics. 162(23), 234106.

Al Hyder R, Colussi VE, Čufar M, Brand J, Recati A, Bruun GM. 2025. **Lattice Bose polarons at strong coupling and quantum criticality.** Scipost Physics. 19(1), 002.

Becker A, Koutentakis G, Schmelcher P. 2025. **Dynamical probe of the pseudo Jahn-Teller effect in one-dimensional confined fermions.** Physical Review Research. 7(3), 033088.

Brauneis F, Hammer HW, Reimann SM, Volosniev A. 2025. **Comparison of renormalized interactions using one-dimensional few-body systems as a testbed.** Physical Review A. 111(1), 013303.

Cappellaro A, Bighin G, Cherepanov I, Lemeshko M. 2025. **Environment-limited transfer of angular momentum in Bose liquids.** Journal of Chemical Physics. 162(7), 074104.

Hrast M, Ljubotina M, Zitnik M. 2025. **Ab initio Auger spectrum of the ultrafast dissociating 2p3/2−1σ* resonance in HCl.** Physical Chemistry Chemical Physics. 27(3), 1473–1482.

Juraschek DM, Geilhufe RM, Zhu H, Basini M, Baum P, Baydin A, Chaudhary S, Fechner M, Flebus B, Grissonnanche G, Kirilyuk AI, Lemeshko M, Maehrlein SF, Mignolet M, Murakami S, Niu Q, Nowak U, Romao CP, Rostami H, Satoh T, Spaldin NA, Ueda H, Zhang L. 2025. **Chiral phonons.** Nature Physics. 21, 1532–1540.

Kluibenschedl F, Koutentakis G, Al Hyder R, Lemeshko M. 2025. **Domain-wall ferroelectric polarons in a two-dimensional rotor lattice model.** Physical Review Letters. 134(9), 096302.

Koutentakis G, Mistakidis SI, Grusdt F, Sadeghpour HR, Schmelcher P. 2025. **Competition of light-and phonon-dressing in microwave-dressed Bose polarons.** Scipost Physics. 19(4), 093.

Kristensen HH, Kranabetter L, Ghazaryan A, Schouder CA, Hansen E, Jensen F, Zillich RE, Lemeshko M, Stapelfeldt H. 2025. **Nonadiabatic laser-induced alignment dynamics of alkali-metal dimers on the surface of a helium droplet.** Physical Review A. 111(3), 033114.

Lorenc D, Volosniev A, Zhumekenov AA, Lee S, Ibáñez M, Bakr OM, Lemeshko M, Alpichshev Z. 2025. **Observation of analogue dynamic Schwinger effect and non-perturbative light sensing in lead halide perovskites.** ACS Photonics. 12(9), 5220–5230.

Shiva Kumar A, Maslov M, Lemeshko M, Volosniev A, Alpichshev Z. 2025. **Massive Dirac-Pauli physics in lead-halide perovskites.** npj Quantum Materials. 10, 37.

Suchorowski M, Badamshina A, Lemeshko M, Tomza M, Volosniev A. 2025. **Quantum rotor in a two-dimensional mesoscopic Bose gas.** SciPost Physics. 18(2), 059.

Locatello Group

Chen J, Yao D, Pervez AA, Alistarh D-A, Locatello F. 2025. **Scalable mechanistic neural networks.** 13th International Conference on Learning Representations. ICLR: International Conference on Learning Representations, 63716–63737.

Gairola S, Böhle M, Locatello F, Schiele B. 2025. **How to probe: Simple yet effective techniques for improving post-hoc explanations.** 13th International Conference on Learning Representations. ICLR: International Conference on Learning Representations.

Huang S, Pfister N, Bowden J. 2025. **Sparse causal effect estimation using two-sample summary statistics in the presence of unmeasured confounding.** The 28th International Conference on Artificial Intelligence and Statistics. AISTATS: Conference on Artificial Intelligence and Statistics, PMLR, vol. 258, 3394–3402.

Montagna F, Cairney-Leeming MT, Sridhar D, Locatello F. 2025. **Demystifying amortized causal discovery with transformers.** Transactions on Machine Learning Research.

Montagna F, Faller P, Blöbaum P, Kirschbaum E, Locatello F. 2025. **Score matching through the roof: Linear, nonlinear, and latent variables causal discovery.** Proceedings of the Fourth Conference on Causal Learning and Reasoning. CLeaR: Conference on Causal Learning and Reasoning, PMLR, vol. 275, 552–605.

Pariza V, Salehi M, Burghouts G, Locatello F, Asano YM. 2025. **Near, far: Patch-ordering enhances vision foundation models' scene understanding.** 13th International Conference on Learning Representations. ICLR: International Conference on Learning Representations, 72303–72330.

Pervez AA, Gavves E, Locatello F. 2025. **Mechanistic PDE networks for discovery of governing equations.** 42nd International Conference on Machine Learning. ICML: International Conference on Machine Learning, PMLR, vol. 267, 48962–48973.

Yao D, Rancati D, Cadei R, Fumero M, Locatello F. 2025. **Unifying causal representation learning with the invariance principle.** 13th International Conference on Learning Representations. ICLR: International Conference on Learning Representations.

Yao D, Tronarp F, Bosch N. 2025. **Propagating model uncertainty through filtering-based probabilistic numerical ODE solvers.** Proceedings of the 1st International Conference on Probabilistic Numerics. ProbNum: Conference on Probabilistic Numerics, PMLR, vol. 271.

Loose Group

Wilmes S, Tönjes J, Drechsler M, Ruf A, Schäfer JH, Lürick A, Januliene D, Apelt S, Di Iorio D, Wegner SV, Loose M, Moeller A, Paululat A, Kümmel D. 2025. **Mechanistic adaptation of the metazoan RabGEFs Mon1-Ccz1 and Fuzzy-Inturned.** Science Advances. 11(35), eadx2893.

Maas Group

Auricchio G, Brigati G, Giudici P, Toscani G. 2025. **Multivariate Gini-type discrepancies.** Mathematical Models and Methods in Applied Sciences. 35(5), 1267–1296.

Brigati G, Stoltz G. 2025. **How to construct explicit decay rates for kinetic Fokker–Planck equations?** SIAM Journal on Mathematical Analysis. 57(4), 3587–3622.

Brigati G, Pedrotti F. 2025. **Heat flow, log-concavity, and Lipschitz transport maps.** Electronic Communications in Probability. 30, 71.

Dello Schiavo L, Herry R, Kopfer E, Sturm KT. 2025. **Polyharmonic fields and Liouville quantum gravity measures on tori of arbitrary dimension: From discrete to continuous.** Mathematische Nachrichten. 298(1), 244–281.

Khudiakova K, Maas J, Pedrotti F. 2025. **L∞-optimal transport of anisotropic log-concave measures and exponential convergence in Fisher's infinitesimal model.** The Annals of Applied Probability. 35(3), 1913–1940.

Kumar RR, Wirth M. 2025. **Operator-valued twisted Araki–Woods algebras.** Communications in Mathematical Physics. 406(5), 110.

Olusanya OO, Khudiakova K, Sachdeva H. 2025. **Genetic load, eco-evolutionary feedback, and extinction in metapopulations.** The American Naturalist. 205(6), 617–636.

Pedrotti F. 2025. **Contractive coupling rates and curvature lower bounds for Markov chains.** The Annals of Applied Probability. 35(1), 196–250.

Matthee Group

Adamo A, Atek H, Bagley MB, Bañados E, Barrow KSS, Berg DA, Bezanson R, Bradač M, Brammer G, Carnall AC, Chisholm J, Coe D, Dayal P, Eisenstein DJ, Eldridge JJ, Ferrara A, Fujimoto S, Graaff AD, Habouzit M, Hutchison TA, Kartaltepe JS, Kassin SA, Kriek M, Labbé I, Maiolino R, Marques-Chaves R, Maseda MV, Mason C, Matthee JJ, Mcquinn KBW, Meynet G, Naidu RP, Oesch PA, Pentericci L, Pérez-González PG, Rigby JR, Roberts-Borsani G, Schaerer D, Shapley AE, Stark DP, Stiavelli M, Strom AL, Vanzella E, Wang F, Wilkins SM, Williams CC, Willott CJ, Wylezalek D, Nota A. 2025. **The first billion years according to JWST.** Nature Astronomy. 9(8), 1134–1147.

Annunziatella M, P'Erez-Gonz'Alez PG, Álvarez-Márquez J, Costantin L, Iani E, Labiano U, Rinaldi P, Boogaard L, Langeroodi D, Hjorth J, Alonso-Herrero A, Eckart A, Walter F, Van Der Werf PP, Bik A, Peißker F, Caputi KI, García-Marín M, Wright G, Greve TR. 2025. **MIDIS: Unveiling the star formation history in massive galaxies at 1 < z < 4.5 with spectro-photometric analysis.** Astronomy & Astrophysics. 702, A224.

Banerjee E, Muzahid S, Schaye J, Blaizot J, Bouché N, Cantalupo S, Johnson SD, Matthee JJ, Verhamme A. 2025. **MUSEQuBES: Connecting H i Absorption with Lyα emitters at z ≈ 3.3.** The Astrophysical Journal. 980(2), 171.

Claeyssens A, Adamo A, Messa M, Dessauges-Zavadsky M, Richard J, Kramarenko I, Matthee JJ, Naidu RP. 2025. **Tracing star formation across cosmic time at tens of parsec-scales in the lensing cluster field Abell 2744.** Monthly Notices of the Royal Astronomical Society. 537(3), 2535–2558.

Covelo-Paz A, Giovinazzo E, Oesch PA, Meyer RA, Weibel A, Brammer G, Fudamoto Y, Kerutt J, Lin J, Matharu J, Naidu RP, Velichko A, Bollo V, Bouwens R, Chisholm J, Illingworth GD, Kramarenko I, Magee D, Maseda M, Matthee JJ, Nelson E, Reddy N, Schaerer D, Stefanon M, Xiao M. 2025. **An Hα view of galaxy buildup in the first 2 Gyr: Luminosity functions at z ~ 4–6.5 from NIRCam/grism spectroscopy.** Astronomy & Astrophysics. 694, A178.

Dalmasso N, Watson PJ, Treu T, Trenti M, Vulcani B, Nanayakkara T, Bradač M, Jones T, Boyett K, Wang X, Mascia S, Pentericci L. 2025. **Quantifying spectroscopic flux variations between JWST NIRISS and NIRSpec: Slit losses in emission line measurements of z ~ 1-3 galaxies.** Monthly Notices of the Royal Astronomical Society. 544(2), 1915–1925.

De Graaff A, Setton DJ, Brammer G, Cutler S, Suess KA, Labbé I, Leja J, Weibel A, Maseda MV, Whitaker KE, Bezanson R, Boogaard LA, Cleri NJ, De Lucia G, Franx M, Greene JE, Hirschmann M, Matthee JJ, Mcconachie I, Naidu RP, Oesch PA, Price SH, Rix HW, Valentino F, Wang B, Williams CC. 2025. **Efficient formation of a massive quiescent galaxy at redshift 4.9.** Nature Astronomy. 9, 280–292.

de Graaff A, Brammer G, Weibel A, Lewis Z, Maseda MV, Oesch PA, Bezanson R, Boogaard LA, Cleri NJ, Cooper OR, Gottumukkala R, Greene JE, Hirschmann M, Hviding RE, Katz H, Labbé I, Leja J, Matthee JJ, McConachie I, Miller TB, Naidu RP, Price SH, Rix H-W, Setton DJ, Suess KA, Wang B, Whitaker KE, Williams CC. 2025. **RUBIES: A complete census of the bright and red distant universe with JWST/NIRSpec.** Astronomy & Astrophysics. 697, A189.

De Graaff A, Rix HW, Naidu RP, Labbé I, Wang B, Leja J, Matthee JJ, Katz H, Greene JE, Hviding RE, Baggen J, Bezanson R, Boogaard LA, Brammer G, Dayal P, Van Dokkum P, Goulding AD, Hirschmann M, Maseda MV, Mcconachie I, Miller TB, Nelson E, Oesch PA, Setton DJ, Shivaei I, Weibel A, Whitaker KE, Williams CC. 2025. **A remarkable ruby: Absorption in dense gas, rather than evolved stars, drives the extreme Balmer break of a little red dot at z = 3.5.** Astronomy & Astrophysics. 701, A168.

Dottorini D, Calabrò A, Pentericci L, Mascia S, Llerena M, Napolitano L, Santini P, Roberts-Borsani G, Castellano M, Amorin R, Dickinson M, Fontana A, Hathi N, Hirschmann M, Koekemoer AM, Lucas RA, Merlin E, Morales A, Pacucci F, Wilkins S, Arrabal Haro P, Bagley M, Finkelstein SL, Kartaltepe J, Papovich C, Pirzkal N. 2025. **Evolution of the UV slope of galaxies at cosmic morning (z > 4): The properties of extremely blue galaxies.** Astronomy & Astrophysics. 698, A234.

Duncan KJ, Mcleod DJ, Best PN, Pirie CA, Clausen M, Cochrane RK, Dunlop JS, Flury SR, Geach JE, Grogin NA, Hale CL, Ibar E, Kondapally R, Li Z, Matthee JJ, Mclure RJ, Ossa-Fuentes L, Patrick AL, Smail I, Sobral D, Stephenson HM0, Stott JP, Swinbank AM. 2025. **The JWST Emission-Line Survey: Extending rest-optical narrow-band emission-line selection into the Epoch of Reionization.** Monthly Notices of the Royal Astronomical Society. 541(2), 1329–1347.

Eilers AC, Yue M, Matthee JJ, Hennawi JF, Davies FB, Simcoe RA, Teague R, Bordoloi R, Brammer G, Kang Y, Kashino D, Mackenzie R, Naidu RP, Navarrete B. 2025. **The light echo of a high-redshift quasar mapped with Lyα tomography.** The Astrophysical Journal Letters. 991(2), L40.

Fujimoto S, Naidu RP, Chisholm J, Atek H, Endsley R, Kokorev V, Furtak LJ, Pan R, Liu B, Bromm V, Venditti A, Visbal E, Sarmento R, Weibel A, Oesch PA, Brammer G, Schaerer D, Adamo A, Berg DA, Bezanson R, Bouwens R, Chemerynska I, Claeyssens A, Dessauges-Zavadsky M, Frebel A, Korber D, Labbe I, Marques-Chaves R, Matthee JJ, McQuinn KBW, Muñoz JB, Natarajan P, Saldana-Lopez A, Suess KA, Volonteri M, Zitrin A. 2025. **GLIMPSE: An ultrafaint ≃ 10^5 M ⊙ Pop III galaxy candidate and first constraints on the Pop III UV luminosity function at z ≃ 6–7.** The Astrophysical Journal. 989, 46.

Furtak LJ, Secunda AR, Greene JE, Zitrin A, Labbé I, Golubchik M, Bezanson R, Kokorev V, Atek H, Brammer GB, Chemerynska I, Cutler SE, Dayal P, Feldmann R, Fujimoto S, Glazebrook K, Leja J, Ma Y, Matthee JJ, Naidu RP, Nelson EJ, Oesch PA, Pan R, Price SH, Suess KA, Wang B, Weaver JR, Whitaker KE. 2025. **Investigating photometric and spectroscopic variability in the multiply imaged little red dot A2744-QS01.** Astronomy & Astrophysics. 698, A227.

Gazagnes S, Chisholm J, Endsley R, Berg DA, Leclercq F, Jurlin N, Saldana-Lopez A, Finkelstein SL, Flury SR, Guseva NG, Henry A, Izotov YI, Jung I, Matthee JJ, Schaerer D. 2025. **A negligible contribution of two luminous z ~7.5 galaxies to the ionizing photon budget of reionization.** Monthly Notices of the Royal Astronomical Society. 540(3), 2331–2348.

Gurung-López S, Byrohl C, Gronke M, Spinoso D, Torralba Torregrosa A, Fernández-Soto A, Arnalte-Mur P, Martínez VJ. 2025. **zELDA II: Reconstruction of galactic Lyman-alpha spectra attenuated by the intergalactic medium using neural networks.** Astronomy & Astrophysics. 698, A139.

Heintz KE, Brammer GB, Watson D, Oesch PA, Keating LC, Hayes MJ, Abdurro'Uf U, Arellano-Córdova KZ, Carnall AC, Christiansen CR, Cullen F, Davé R, Dayal P, Ferrara A, Finlator K, Fynbo JPU, Flury SR, Gelli V, Gillman S, Gottumukkala R, Gould K, Greve TR, Hardin SE, Hsiao TYY, Hutter A, Jakobsson P, Killi M, Khosravaninezhad N, Laursen P, Lee MM, Magdis GE, Matthee JJ, Naidu RP, Narayanan D, Pollock C, Prescott MKM, Rusakov V, Shuntov M, Sneppen A, Smit R, Tanvir NR, Terp C, Toft S, Valentino F, Vijayan AP, Weaver JR, Wise JH, Witstok J. 2025. **The JWST-PRIMAL archival survey: A JWST/NIRSpec reference sample for the physical properties and Lyman-α absorption and emission of ~600 galaxies at z = 5.0-13.4.** Astronomy & Astrophysics. 693, A60.

Herard-Demanche T, Bouwens RJ, Oesch PA, Naidu RP, Decarli R, Nelson EJ, Brammer G, Weibel A, Xiao M, Stefanon M, Walter F, Matthee JJ, Meyer RA, Wuyts S, Reddy N, Rowland L, van Leeuwen I, Haro PA, Dannerbauer H, Shapley AE, Chisholm J, van Dokkum P, Labbe I, Illingworth G, Schaerer D, Shivaei I. 2025. **Mapping dusty galaxy growth at z > 5 with FRESCO: Detection of Hα in submm galaxy HDF850.1 and the surrounding overdense structures.** Monthly Notices of the Royal Astronomical Society. 537(2), 788–808.

Hviding RE, de Graaff A, Miller TB, Setton DJ, Greene JE, Labbé I, Brammer G, Bezanson R, Boogaard LA, Cleri NJ, Leja J, Maseda MV, McConachie I, Matthee JJ, Naidu RP, Oesch PA, Wang B, Whitaker KE, Williams CC. 2025. **RUBIES: A spectroscopic census of little red dots.** Astronomy & Astrophysics. 702, A57.

Iani E, Rinaldi P, Caputi KI, Annunziatella M, Langeroodi D, Melinder J, Pérez-González PG, Álvarez-Márquez J, Boogaard LA, Bosman SEI, Costantin L, Moutard T, Colina L, Östlin G, Greve TR, Wright G, Alonso-Herrero A, Bik A, Gillman S, Crespo Gómez A, Hjorth J, Kendrew S, Labiano A, Pye JP, Tikkanen TV, Walter F, Güdel M, Henning T, Van Der Werf PP. 2025. **MIDIS: MIRI uncovers Virgil, the first Little Red Dot with clear detection of its host galaxy at z ≃ 6.6.** The Astrophysical Journal. 989(2), 160.

Katz H, Cameron AJ, Saxena A, Barrufet L, Choustikov N, Cleri NJ, De Graaff A, Ellis RS, Fosbury RAE, Heintz KE, Maseda M, Matthee JJ, Mcconachie I, Oesch PA. 2025. **21 Balmer Jump Street: The nebular continuum at high redshift and implications for the bright galaxy problem, UV continuum slopes, and early stellar populations.** The Open Journal of Astrophysics. 8.

Komori F, Inoue AK, Mawatari K, Sugahara Y, Umehata H, Shimakawa R, Yamanaka S, Hashimoto T, Matthee JJ, Misawa T. 2025. **The first direct imaging of the silhouette of a damped Lyman α system along the line-of-sight to a background galaxy.** Monthly Notices of the Royal Astronomical Society. 543(3), 2943–2957.

Liu Y, Mascia S, Pentericci L, Watson P, Alavi A, Bergamini P, Bradač M, Calabrò A, Glazebrook K, Henry A, Llerena M, Merlin E, Metha B, Nanayakkara T, Napolitano L, Roy N, Siana B, Vanzella E, Vulcani B, Wang X. 2025. **A Lyman continuum analysis of ~100 galaxies at z spec~ 3 in the Abell 2744 cluster field.** Astronomy & Astrophysics. 704, A328.

Llerena M, Pentericci L, Napolitano L, Mascia S, Amorín R, Calabrò A, Castellano M, Cleri NJ, Giavalisco M, Grogin NA, Hathi NP, Hirschmann M, Koekemoer AM, Nanayakkara T, Pacucci F, Shen L, Wilkins SM, Yoon I, Yung LYA, Bhatawdekar R, Lucas RA, Wang X, Arrabal Haro P, Bagley MB, Finkelstein SL, Kartaltepe JS, Merlin E, Papovich C, Pirzkal N, Santini P. 2025. **The ionizing photon production efficiency of star-forming galaxies at z ~ 4–10.** Astronomy & Astrophysics. 698, A302.

Marshall MA, Yue M, Eilers AC, Scholtz J, Perna M, Willott CJ, Maiolino R, Übler H, Arribas S, Bunker AJ, Charlot S, Rodríguez Del Pino B, Böker T, Carniani S, Circosta C, Cresci G, D'Eugenio F, Jones GC, Venturi G, Bordoloi R, Kashino D, Mackenzie R, Matthee JJ, Naidu R, Simcoe RA. 2025. **GA-NIFS and EIGER: A merging quasar host at z = 7 with an overmassive black hole.** Astronomy & Astrophysics. 702, A50.

Mascia S, Pentericci L, Llerena M, Calabrò A, Matthee JJ, Flury S, Pacucci F, Jaskot A, Amorín RO, Bhatawdekar R, Castellano M, Cleri N, Costantin L, Davis K, Di Cesare C, Dickinson M, Fontana A, Guo Y, Giavalisco M, Holwerda BW, Hu W, Huertas-Company M, Jung I, Kartaltepe J, Kashino D, Koekemoer AM, Lucas RA, Lotz J, Napolitano L, Jogee S, Wilkins S. 2025. **Little impact of mergers and galaxy morphology on the production and escape of ionizing photons in the early Universe.** Astronomy & Astrophysics. 701, A122.

Matthee JJ. 2025. **JWST provides a new view of cosmic dawn: Latest developments in studies of early galaxies.** Contemporary Physics. 66(1–4), 116–151.

Matthee JJ, Naidu RP, Kotiwale G, Furtak LJ, Kramarenko I, Mackenzie R, Greene J, Adamo A, Bouwens RJ, Di Cesare C, Eilers A-C, de Graaff A, Heintz KE, Kashino D, Maseda MV, Tacchella S, Torralba Torregrosa A. 2025. **Environmental evidence for overly massive Black Holes in low-mass galaxies and a Black Hole–Halo mass relation at z ~ 5.** The Astrophysical Journal. 988(2), 246.

Pirie CA, Best PN, Duncan KJ, Mcleod DJ, Cochrane RK, Clausen M, Dunlop JS, Flury SR, Geach JE, Hale CL, Ibar E, Kondapally R, Li Z, Matthee JJ, Mclure RJ, Ossa-Fuentes L, Patrick AL, Smail I, Sobral D, Stephenson HM0, Stott JP, Swinbank AM. 2025. **The JWST Emission Line Survey (JELS): An untargeted search for Hα emission line galaxies at z > 6 and their physical properties.** Monthly Notices of the Royal Astronomical Society. 541(2), 1348–1376.

Sawant P, Nanni A, Romano M, Donevski D, Bruzual G, Ysard N, Lemaux BC, Inami H, Calura F, Pozzi F, Małek K, Junais J, Boquien M, Faisst AL, Hamed M, Ginolfi M, Zamorani G, Lorenzon G, Molina J, Bardelli S, Ibar E, Vergani D, Di Cesare C, Béthermin M, Burgarella D, Cassata P, Dessauges-Zavadsky M, D'Onghia E, Dubois Y, Magdis GE, Mendez-Hernandez H. 2025. **The ALPINE-ALMA [CII] survey: Unveiling the baryon evolution in the interstellar medium of z ~ 5 star-forming galaxies.** Astronomy & Astrophysics. 694, A82.

Setton DJ, Greene JE, de Graaff A, Ma Y逸伦, Leja J, Matthee JJ, Bezanson R, Boogaard LA, Cleri NJ, Katz H, Labbe I, Maseda MV, McConachie I, Miller TB, Price SH, Suess KA, van Dokkum P, Wang 王 B冰洁, Weibel A, Whitaker KE, Williams CC. 2025. **Little Red Dots at an inflection point: Ubiquitous v-shaped turnover consistently occurs at the Balmer limit.** The Astrophysical Journal. 995(1), 118.

Setton DJ, Greene JE, Spilker JS, Williams CC, Labbé I, Ma Y逸伦, Wang B冰洁, Whitaker KE, Leja J, de Graaff A, Alberts S, Bezanson R, Boogaard LA, Brammer G, Cutler SE, Cleri NJ, Cooper OR, Dayal P, Fujimoto S, Furtak LJ, Goulding AD, Hirschmann M, Kokorev V, Maseda MV, McConachie I, Matthee JJ, Miller TB, Naidu RP, Oesch PA, Pan R, Price SH, Suess KA, Weaver JR, Xiao M, Zhang Y, Zitrin A. 2025. **A confirmed deficit of hot and cold dust emission in the most luminous Little Red Dots.** The Astrophysical Journal Letters. 991, L10.

Stephenson HM0, Stott JP, Pirie CA, Duncan KJ, Mcleod DJ, Best PN, Brinch M, Clausen M, Cochrane RK, Dunlop JS, Flury SR, Geach JE, Hale CL, Ibar E, Li Z, Matthee JJ, Mclure RJ, Ossa-Fuentes L, Patrick AL, Sobral D, Swinbank AM. 2025. **The JWST Emission Line Survey (JELS): The sizes and merger fraction of star-forming galaxies during the Epoch of Reionization.** Monthly Notices of the Royal Astronomical Society. 544(2), 1412–1431.

Vitte E, Verhamme A, Hibon P, Leclercq F, Alcalde Pampliega B, Kerutt J, Kusakabe H, Matthee JJ, Guo Y, Bacon R, Maseda M, Richard J, Pharo J, Schaye J, Boogaard L, Nanayakkara T, Contini T. 2025. **The MUSE eXtremely Deep Field: Classifying the spectral shapes of Ly α -emitting galaxies.** Astronomy & Astrophysics. 694, A100.

Wang W, Cantalupo S, Pensabene A, Galbiati M, Travascio A, Steidel CC, Maseda MV, Pezzulli G, De Beer S, Fossati M, Fumagalli M, Gallego SG, Lazeyras T, Mackenzie R, Matthee JJ, Nanayakkara T, Quadri G. 2025. **A giant disk galaxy two billion years after the Big Bang.** Nature Astronomy. 9, 710–719.

Wang B, De Graaff A, Davies RL, Greene JE, Leja J, Brammer GB, Goulding AD, Miller TB, Suess KA, Weibel A, Williams CC, Bezanson R, Boogaard LA, Cleri NJ, Hirschmann M, Katz H, Labbé I, Maseda MV, Matthee JJ, Mcconachie I, Naidu RP, Oesch PA, Rix HW, Setton DJ, Whitaker KE. 2025. **RUBIES: JWST/NIRSpec confirmation of an infrared-luminous, broad-line Little Red Dot with an ionized outflow.** The Astrophysical Journal. 984(2), 121.

Weibel A, De Graaff A, Setton DJ, Miller TB, Oesch PA, Brammer G, Lagos CDP, Whitaker KE, Williams CC, Baggen JFW, Bezanson R, Boogaard LA, Cleri NJ, Greene JE, Hirschmann M, Hviding RE, Kuruvanthodi A, Labbé I, Leja J, Maseda MV, Matthee JJ, Mcconachie I, Naidu RP, Roberts-Borsani G, Schaerer D, Suess KA, Valentino F, Van Dokkum P, Wang B. 2025. **RUBIES reveals a massive quiescent galaxy at z = 7.3.** The Astrophysical Journal. 983(1), 11.

Xiao M, Oesch PA, Bing L, Elbaz D, Matthee JJ, Fudamoto Y, Fujimoto S, Marques-Chaves R, Williams CC, Dessauges-Zavadsky M, Valentino F, Brammer G, Covelo-Paz A, Daddi E, Fynbo JPU, Gillman S, Ginolfi M, Giovinazzo E, Greene JE, Gu Q, Illingworth G, Inayoshi K, Kokorev V, Meyer RA, Naidu RP, Reddy NA, Schaerer D, Shapley A, Stefanon M, Steinhardt CL, Setton DJ, Vestergaard M, Wang T. 2025. **No [C II] or dust detection in two Little Red Dots at zspec > 7.** Astronomy & Astrophysics. 700, A231.

Yue M, Eilers AC, Matthee JJ, Naidu RP, Bordoloi R, Davies FB, Hennawi JF, Kashino D, Mackenzie R, Simcoe RA. 2025. **Escape fractions from unattenuated Lyα emitters around luminous z > 6 quasars.** The Astrophysical Journal Letters. 993(1), L12.

Östlin G, Pérez-González PG, Melinder J, Gillman S, Iani E, Costantin L, Boogaard LA, Rinaldi P, Colina L, Nørgaard-Nielsen HU, Dicken D, Greve TR, Wright G, Alonso-Herrero A, Álvarez-Márquez J, Annunziatella M, Bik A, Bosman SEI, Caputi KI, Gomez AC, Eckart A, Garcia-Marin M, Hjorth J, Ilbert O, Jermann I, Kendrew S, Labiano A, Langeroodi D, Le Fevre O, Libralato M, Meyer RA, Moutard T, Peissker F, Pye JP, Tikkanen TV, Topinka M, Walter F, Ward M, Van Der Werf P, Van Dishoeck EF, Güdel M, Henning T, Lagage PO, Ray TP, Vandenbussche B. 2025. **MIRI Deep Imaging Survey (MIDIS) of the Hubble Ultra Deep Field: Survey description and early results for the galaxy population detected at 5.6 μm.** Astronomy & Astrophysics. 696, A57.

Ďurovčíková D, Eilers AC, Simcoe RA, Welsh L, Meyer RA, Matthee JJ, Ryan-Weber EV, Yue M, Katz H, Satyavolu S, Becker G, Davies FB, Farina EP. 2025. **An extremely metal-poor Lyα emitter candidate at z = 6 revealed through absorption spectroscopy.** The Astrophysical Journal Letters. 987(2), L33.

Michael Group

Chakraborty D, Sandate CR, Isbel L, Kempf G, Weiss J, Cavadini S, Kater L, Seebacher J, Kozicka Z, Stoos L, Grand RS, Schübeler D, Michael AK, Thomä NH. 2025. **Nucleosomes specify co-factor access to p53.** Molecular Cell. 85(15), 2919–2936. e12.

Harar P, Herrmann L, Grohs P, Haselbach D. 2025. **FakET: Simulating cryo-electron tomograms with neural style transfer.** Structure. 33(4), 820–827.e4.

Modic Group

Farooq H, Nauman M. 2025. **Non-linear magnetotropic susceptibility in FePS3.** Journal of Physics Condensed Matter. 37(40), 405801.

Mondelli Group

Barbier J, Camilli F, Xu Y, Mondelli M. 2025. **Information limits and Thouless-Anderson-Palmer equations for spiked matrix models with structured noise.** Physical Review Research. 7, 013081.

Bombari S, Mondelli M. 2025. **Privacy for free in the overparameterized regime.** Proceedings of the National Academy of Sciences. 122(15), e2423072122.

Bombari S, Mondelli M. 2025. **Spurious correlations in high dimensional regression: The roles of regularization, simplicity bias and over-parameterization.** Proceedings of the 42nd International Conference on Machine Learning. ICML: International Conference on Machine Learning, PMLR, vol. 267, 4839–4873.

El Latif Kadry A, Zhang Y, Weinberger N. 2025. **Mean estimation in high-dimensional binary timeinhomogeneous Markov Gaussian mixture models.** 2025 IEEE International Symposium on Information Theory Proceedings. ISIT: International Symposium on Information Theory.

Emrullah Ildiz M, Gozeten HA, Taga EO, Mondelli M, Oymak S. 2025. **High-dimensional analysis of knowledge distillation: Weak-to-Strong generalization and scaling laws.** 13th International Conference on Learning Representations. ICLR: International Conference on Learning Representations, 2967–3006.

Fornasier M, Klock T, Mondelli M, Rauchensteiner M. 2025. **Efficient identification of wide shallow neural networks with biases.** Applied and Computational Harmonic Analysis. 77, 101749.

Gozeten HA, Ildiz ME, Zhang X, Soltanolkotabi M, Mondelli M, Oymak S. 2025. **Test-time training provably improves transformers as in-context learners.** Proceedings of the 42nd International Conference on Machine Learning. ICML: International Conference on Machine Learning, PMLR, vol. 267, 20266–20295.

Jacot A, Súkeník P, Wang Z, Mondelli M. 2025. **Wide neural networks trained with weight decay provably exhibit neural collapse.** 13th International Conference on Learning Representations. ICLR: International Conference on Learning Representations, 1905–1931.

Kovačević F, Yihan Z, Mondelli M. 2025. **Spectral estimators for multi-index models: Precise asymptotics and optimal weak recovery.** Proceedings of 38th Conference on Learning Theory. COLT: Conference on Learning Theory, PMLR, vol. 291, 3354–3404.

Resch N, Yuan C, Zhang Y. 2025. **Tight bounds on list-decodable and list-recoverable zero-rate codes.** 16th Innovations in Theoretical Computer Science Conference. ITCS: Innovations in Theoretical Computer Science, LIPIcs, vol. 325, 82.

Wegel T, Kovačević F, Ţifrea A, Yang F. 2025. **Learning Pareto manifolds in high dimensions: How can regularization help?** The 28th International Conference on Artificial Intelligence and Statistics. AISTATS: Conference on Artificial Intelligence and Statistics, PMLR, vol. 258, 4591–4599.

Wu D, Mondelli M. 2025. **Neural collapse beyond the unconstrained features model: Landscape, dynamics, and generalization in the mean-field regime.** Proceedings of the 42nd International Conference on Machine Learning. ICML: International Conference on Machine Learning, PMLR, vol. 267, 67499–67536.

Zhang Y, Ji HC, Venkataramanan R, Mondelli M. 2025. **Spectral estimators for structured generalized linear models via approximate message passing.** Mathematical Statistics and Learning. 8(3–4), 193–304.

Muller Group

Abramian S, Muller CJ, Risi C, Fiolleau T, Roca R. 2025. **How key features of early development shape deep convective systems.** npj Climate and Atmospheric Science. 8, 258.

Agasthya LN, Muller CJ, Cheve M. 2025. **Moist convective scaling: Insights from an idealised model.** Quarterly Journal of the Royal Meteorological Society. 151(766), e4902.

Antezana-Lopez F, Casallas Garcia A, Zhou G, Zhang K, Jing G, Ali A, Lopez-Barrera E, Belalcazar LC, Rojas N, Jiang H. 2025. **High-resolution anthropogenic emission inventories with deep learning in northern South America.** Remote Sensing of Environment. 324, 114761.

Bao J, Bony S, Takasuka D, Muller CJ. 2025. **Tropics-wide intraseasonal oscillations.** Proceedings of the National Academy of Sciences. 122(48), e2511549122.

Casallas Garcia A, Tompkins AM, Muller CJ, Thompson G. 2025. **Sensitivity of self-aggregation and the key role of the free convection distance.** Journal of Advances in Modeling Earth Systems. 17(3), e2024MS004791.

Gnanaraj AM, Bao J, Schmidt H. 2025. **The impact of the rotation rate on an aquaplanet's radiant energy budget: Insights from experiments varying the Coriolis parameter.** Weather and Climate Dynamics. 6(2), 489–503.

GOSWAMI BB, Polesello A, Muller CJ. 2025. **An assessment of representing land-ocean heterogeneity via CAPE relaxation timescale in the Community Atmospheric Model 6 (CAM6).** Journal of Advances in Modeling Earth Systems. 17(9), e2025MS005035.

Hwong Y-L, Byers E, Werning M, Quilcaille Y. 2025. **Sustainable development key to limiting climate change-driven wildfire damages.** Environmental Research: Climate. 4(3), 035005.

Plata C, Casallas Garcia A. 2025. **Machine learning analysis of the factors influencing university-industry collaborations.** 85th Annual Meeting of the Academy of Management. AOM: Annual Meeting of the Academy of Management vol. 2025.

Polesello A, Charinti GA, Meroni AN, Muller CJ, Pasquero C. 2025. **Intensity oscillations of tropical cyclones: Surface versus mid and upper tropospheric processes.** Journal of Advances in Modeling Earth Systems. 17(4), e2024MS004613.

Segura H et al. 2025. **nextGEMS: Entering the era of kilometer-scale Earth system modeling.** Geoscientific Model Development. 18(20), 7735–7761.

Stöllner A, Lenton IC, Volosniev A, Millen J, Shibuya R, Ishii H, Rak D, Alpichshev Z, David G, Signorell R, Muller CJ, Waitukaitis SR. 2025. **Using optical tweezers to simultaneously trap, charge, and measure the charge of a microparticle in air.** Physical Review Letters. 135(21), 218202.

Tompkins AM, Casallas Garcia A, De Vera MV. 2025. **Drivers of mesoscale convective aggregation and spatial humidity variability in the tropical western Pacific.** npj Climate and Atmospheric Science. 8, 69.

Novarino Group

Jaeger ECB, Vijatovic D, Deryckere A, Zorin N, Nguyen AL, Ivanian G, Woych J, Arnold RC, Ortega Gurrola A, Shvartsman A, Barbieri F, Toma F-A, Gorbsky GJ, Horb ME, Cline HT, Shay TF, Kelley DB, Yamaguchi A, Shein-Idelson M, Tosches MA, Sweeney LB. 2025. **Adeno-associated viral tools to trace neural development and connectivity across amphibians.** Developmental Cell. 60(5), 794–812.e6.

Liang C, Yuan J, Zhang R, Tang X, Schumann G, Hitchen E, Polemiti E, Serin E, Kebir H, Lett TA, Vaidya N, Roy J-C, Walter H, Heinz A, Ralser M, Twardziok S, Eils R, Jentsch M, Taron U-H, Schütz T, Schepanski K, Banaschewski T, Neidhart M, Meyer-Lindenberg A, Tost H, Holz N, Schwarz E, Stringaris A, Christmann N, Janson K, Nees F, Neidhart M, Seefried B, Aden R, Andreassen OA, Westlye LT, van der Meer D, Fernández-Cabello S, Kjelkenes R, Ask H, Rapp M, Tschorn M, Böttger SJ, Marquand A, Bernas A, Novarino G, Slater M, Gallego J, Pastor Á, Feixas G, Eiroa-Orosa FJ, Nöthen MM, Forstner AJ, Claus I, Mathey C, Heilmann-Heimbach S, Hoffmann P, Miller A, Sommer P, Schmitt K, Wilbertz J, Patraskaki M, Jirsa V, Petkoski S, Athanasiadis A-P, Spanlang B, Pearmund C, Hese S, Renner P, Jia T, Chang X, Dai Y, Xia Y, Li Y, Zhang Y, Calhoun V, Thompson P, Clinton N, Desrivières S, Agunbiade K, Yu X, Zhang Z, Chen D, Young AH, Schwalber A, Köhler V, Stahl B, Ogoh G, Schikowski T, Brandlistuen R. 2025. **Projecting the morbidity burden of mental and behavioral disorders associated with increasing humid heat in Shanghai.** Nature Mental Health. 3(12), 1532–1544.

Marano D, Mariano V, Novarino G. 2025. **Fueling the mind: Brain metabolism in health and neurodevelopmental disorders.** Annual Review of Genetics. 59, 415–434.

Pașca SP, Arlotta P, Bateup HS, Camp JG, Cappello S, Gage FH, Knoblich JA, Kriegstein AR, Lancaster MA, Ming GL, Novarino G, Okano H, Parmar M, Park IH, Reiner O, Song H, Studer L, Takahashi J, Temple S, Testa G, Treutlein B, Vaccarino FM, Vanderhaeghen P, Young-Pearse T. 2025. **A framework for neural organoids, assembloids and transplantation studies.** Nature. 639(8054), 315–320.

Serin E, Ritter K, Schumann G, Banaschewski T, Marquand A, Walter H, Ogoh G, Stahl BC, Brandlistuen R, Schikowski T, Young AH, Xinyang Y, Zhang Z, Agunbiade K, Chen D, Desrivières S, Clinton N, Thompson P, Köhler V, Schwalber A, Calhoun VD, Chang X, Zhang Y, Li Y, Dai Y, Yuan J, Xia Y, Jia T, Renner P, Hese S, Spanlang B, Pearmund C, Athanasiadis AP, Petkoski S, Jirsa V, Schmitt K, Wilbertz JH, Patraskaki M, Sommer P, Heilmann-Heimbach S, Mathey CM, Miller AJ, Claus I, Nöthen MM, Hoffmann P, Forstner AJ, Pastor A, Gallego J, Itatani R, Eiroa-Orosa F, Feixas G, Slater M, Novarino G, Böttger SJ, Tschorn M, Rapp M, Ask H, Kjelkenes R, Fernandez S, Van Der Meer D, Westlye LT, Andreassen OA, Aden R, Seefried B, Nees F, Neidhart M, Stringaris A, Schwarz E, Holz N, Tost H, Meyer-Lindenberg A, Christmann N, Janson K, Schepanski K, Schütz T, Taron UH, Eils R, Roy JC, Lett TA, Kebir H, Polemiti E, Hitchen E, Jentsch M, Serin E, Bernas A, Vaidya N, Twardziok S, Ralser M, Heinz A, Schumann G. 2025. **Generating synthetic task-based brain fingerprints for population neuroscience using deep learning.** Communications Biology. 8, 1572.

Tavakoli M, Lyudchik J, Januszewski M, Vistunou V, Agudelo Duenas N, Vorlaufer J, Sommer CM, Kreuzinger C, Oliveira B, Cenameri A, Novarino G, Jain V, Danzl JG. 2025. **Light-microscopy-based connectomic reconstruction of mammalian brain tissue.** Nature. 642, 398–410.

Palacci Group

Carrasco C, Martinet Q, Shen Z, Lintuvuori J, Palacci JA, Aubret A. 2025. **Characterization of nonequilibrium interactions of catalytic microswimmers using phoretically responsive nanotracers.** ACS Nano. 19(11), 11133–11145.

Ju X et al. 2025. **Technology roadmap of micro/nanorobots.** ACS Nano. 19(27), 24174–24334.

Martinet Q, Li YI, Aubret A, Hannezo EB, Palacci JA. 2025. **Emergent dynamics of active elastic microbeams.** Physical Review X. 15(4), 041017.

Volpe G, Araújo NAM, Guix M, Miodownik M, Martin N, Alvarez L, Simmchen J, Leonardo RD, Pellicciotta N, Martinet Q, Palacci JA, Ng WK, Saxena D, Sapienza R, Nadine S, Mano JF, Mahdavi R, Beck Adiels C, Forth J, Santangelo C, Palagi S, Seok JM, Webster-Wood VA, Wang S, Yao L, Aghakhani A, Barois T, Kellay H, Coulais C, Van Hecke M, Pierce CJ, Wang T, Chong B, Goldman DI, Reina A, Trianni V, Volpe G, Beckett R, Nair SP, Armstrong R. 2025. **Roadmap for animate matter.** Journal of Physics Condensed Matter. 37(33), 333501.

Pellicciotti Group

Ayala Á, Muñoz-Castro E, Farinotti D, Farías-Barahona D, Mendoza PA, Macdonell S, Mcphee J, Vargas X, Pellicciotti F. 2025. **Less water from glaciers during future megadroughts in the Southern Andes.** Communications Earth and Environment. 6, 860.

Bernat M, Miles ES, Kneib M, Fujita K, Sasaki O, Shaw T, Pellicciotti F. 2025. **Precipitation phase drives seasonal and decadal snowline changes in high mountain Asia.** Environmental Research Letters. 20(6), 064039.

Bulovic N, Johnson F, Lievens H, Shaw T, Mcphee J, Gascoin S, Demuzere M, Mcintyre N. 2025. **Evaluating the performance of sentinel-1 SAR derived snow depth retrievals over the extratropical Andes cordillera.** Water Resources Research. 61(2), e2024WR037766.

Chen L, Brun P, Buri P, Fatichi S, Gessler A, McCarthy M, Pellicciotti F, Stocker B, Karger DN. 2025. **Global increase in the occurrence and impact of multiyear droughts.** Science. 387(6731), 278–284.

Fontrodona-Bach A, Groeneveld L, Miles E, McCarthy M, Shaw T, Melo Velasco JV, Pellicciotti F. 2025. **DebDaB: A database of supraglacial debris thickness and physical properties.** Earth System Science Data. 17(8), 4213–4234.

Fyffe CL, Potter E, Miles E, Shaw T, McCarthy M, Orr A, Loarte E, Medina K, Fatichi S, Hellström R, Baraer M, Mateo E, Cochachin A, Westoby M, Pellicciotti F. 2025. **Thin and ephemeral snow shapes melt and runoff dynamics in the Peruvian Andes.** Communications Earth and Environment. 6, 434.

Jouberton A, Shaw T, Miles E, Kneib M, Fugger S, Buri P, McCarthy M, Kayumov A, Navruzshoev H, Halimov A, Kabutov K, Homidov F, Pellicciotti F. 2025. **Snowfall decrease in recent years undermines glacier health and meltwater resources in the Northwestern Pamirs.** Communications Earth and Environment. 6, 691.

Kneib M, Maussion F, Brun F, Carcanade G, Farinotti D, Huss M, Van Tiel M, Jouberton A, Schmitt P, Schuster L, Dehecq A, Champollion N. 2025. **Topographically-controlled contribution of avalanches to glacier mass balance in the 21st century.** Nature Communications. 16, 10122.

Melo Velasco JV, Miles E, McCarthy M, Shaw T, Fyffe CL, Fontrodona-Bach A, Pellicciotti F. 2025. **Method dependence in thermal conductivity and aerodynamic roughness length estimates on a debris-covered glacier.** Journal of Geophysical Research: Earth Surface. 130(6), e2025JF008360.

Nicholson L, Stiperski I, Nitti G, Prinz R, Georgi A, Groos AR, Shaw T, Sauter T, Haugeneder M, Mott R, Sicart JE, Brock BW, Albers R, Allegri B, Barral H, Biron R, Charrondiere C, Coulaud C, Fischer A, Reynolds D, Richter N, Schroeder M, Vettori P, Voordendag A, Wydra C. 2025. **The second Hintereisferner experiment (HEFEX II): Initial insights into boundary layer structure and surface–atmosphere exchange processes from intensive observations at a valley glacier.** Bulletin of the American Meteorological Society. 106(10), E2143–E2169.

Sasaki O, Miles ES, Pellicciotti F, Sakai A, Fujita K. 2025. **Contrasting patterns of change in snowline altitude across five Himalayan catchments.** The Cryosphere. 19(11), 5283–5298.

Shaw T, Miles ES, McCarthy M, Buri P, Guyennon N, Salerno F, Carturan L, Brock B, Pellicciotti F. 2025. **Mountain glaciers recouple to atmospheric warming over the twenty-first century.** Nature Climate Change. 15, 1212–1218.

Pieber Group

Anghileri L, Baunis H, Bena A, Giannoudis C, Burke JH, Reischauer S, Merschjann C, Wallick RF, Al Said T, Adams CE, Simionato G, Kovalenko S, Dell'Amico L, Van Der Veen RM, Pieber B. 2025. **Evidence for a unifying Nil/NiIII mechanism in light-mediated cross-coupling catalysis.** Journal of the American Chemical Society. 147(16), 13169–13179.

Noël T, Pieber B. 2025. **Photocatalysis and photochemistry in organic synthesis.** Beilstein Journal of Organic Chemistry. 21, 1645–1647.

Pietrzak Group

Agrawal S, Modi A, Yadav A, Yamada S. 2025. **Zeroizing attacks against evasive and circular evasive LWE.** 23rd International Conference on Theory of Cryptography. TCC: Theory of Cryptography, LNCS, vol. 16269, 259–290.

Auerbach B, Cueto Noval M, Erol B, Pietrzak KZ. 2025. **Continuous group-key agreement: Concurrent updates without pruning.** 45th Annual International Cryptology Conference. CRYPTO: International Cryptology Conference, LNCS, vol. 16007, 141–172.

Avarikioti Z, Bastankhah M, Maddah-Ali MA, Pietrzak KZ, Svoboda J, Yeo MX. 2025. **Route discovery in private payment channel networks.** Computer Security. ESORICS 2024 International Workshops. ESORICS: European Symposium on Research in Computer Security, LNCS, vol. 15263, 207–223.

Baig MA, Günther CU, Pietrzak KZ. 2025. **Nakamoto consensus from multiple resources.** 7th Conference on Advances in Financial Technologies. AFT: Conference on Advances in Financial Technologies, LIPIcs, vol. 354, 16.

Belohorec J, Dvořák P, Hoffmann C, Hubáček P, Mašková K, Pastyřík M. 2025. **On extractability of the KZG family of polynomial commitment schemes.** 45th Annual International Cryptology Conference. CRYPTO: International Cryptology Conference, LNCS, vol. 16005, 584–616.

Brandt N, Cueto Noval M, Günther CU, Ünal A, Wohnig S. 2025. **Constrained verifiable random functions without obfuscation and friends.** 23rd International Conference on Theory of Cryptography. TCC: Theory of Cryptography, LNCS, vol. 16271, 478–511.

Chatterjee K, Gilbert S, Schmid S, Svoboda J, Yeo MX. 2025. **When is liquid democracy possible? On the manipulation of variance.** Proceedings of the ACM Symposium on Principles of Distributed Computing. PODC: Symposium on Principles of Distributed Computing, 241–251.

Cueto Noval M, Merz S-P, Stählin P, Ünal A. 2025. **On the soundness of algebraic attacks against code-based assumptions.** 44th Annual International Conference on the Theory and Applications of Cryptographic Techniques. EUROCRYPT: International Conference on the Theory and Applications of Cryptographic Techniques, LNCS, vol. 15606, 385–415.

Dujmovic J, Günther CU, Pietrzak KZ. 2025. **Space-deniable proofs.** 23rd International Conference on Theory of Cryptography. TCC: Theory of Cryptography, LNCS, vol. 16271, 171–202.

Hoffmann C, Pietrzak KZ. 2025. **Watermarkable and zero-knowledge Verifiable Delay Functions from any proof of exponentiation.** 28th IACR International Conference on Practice and Theory of Public-Key Cryptography. PKC: Public-Key Cryptography, LNCS, vol. 15674, 36–66.

Praetorius Group

Broerman AJ, Pollmann C, Zhao Y, Lichtenstein MA, Jackson MD, Tessmer MH, Ryu WH, Ogishi M, Abedi MH, Sahtoe DD, Allen A, Kang A, De La Cruz J, Brackenbrough E, Sankaran B, Bera AK, Zuckerman DM, Stoll S, Garcia KC, Praetorius FM, Piehler J, Baker D. 2025. **Design of facilitated dissociation enables timing of cytokine signalling.** Nature. 647, 528–535.

Robinson Group

Bernabeu E, Chybowska AD, Kresovich JK, Suderman M, Mccartney DL, Hillary RF, Corley J, Valdés-Hernández MDC, Maniega SM, Bastin ME, Wardlaw JM, Xu Z, Sandler DP, Campbell A, Harris SE, Mcintosh AM, Taylor JA, Yousefi P, Cox SR, Evans KL, Robinson MR, Vallejos CA, Marioni RE. 2025. **Blood-based epigenome-wide association study and prediction of alcohol consumption.** Clinical Epigenetics. 17, 14.

Depope N, Depope A, Archodoulaki VM, Ipsmiller W, Bartl A. 2025. **Deep eutectic solvent as a solution for polyester/cotton textile recycling.** Waste Management. 208, 115177.

Robertson JA, Bajzik J, Vernardis S, Chybowska AD, Mccartney DL, Grauslys A, Mur J, Smith HM, Campbell A, Drake C, Grant H, Pearce J, Russ TC, Adkin P, White M, Brigden C, Messner CB, Porteous DJ, Hayward C, Cox SR, Zelezniak A, Ralser M, Robinson MR, Marioni RE. 2025. **Methylome-wide association studies and epigenetic biomarker development for 133 mass spectrometry-assessed circulating proteins in 14,671 Generation Scotland participants.** Genome Biology. 26, 417.

Shahzad Z, Hollwey E, Moore JD, Choi J, Cassin-Ross G, Rouached H, Robinson MR, Zilberman D. 2025. **Gene body methylation regulates gene expression and mediates phenotypic diversity in natural Arabidopsis populations.** Nature Plants. 11, 2084–2099.

Smith HM, Ng HK, Moodie JE, Gadd DA, Mccartney DL, Bernabeu E, Campbell A, Redmond P, Taylor A, Page D, Corley J, Harris SE, Tay D, Deary IJ, Evans KL, Robinson MR, Chambers JC, Loh M, Cox SR, Marioni RE, Hillary RF. 2025. **DNA methylation-based predictors of metabolic traits in Scottish and Singaporean cohorts.** American Journal of Human Genetics. 112(1), 106–115.

Sammler Group

Bedarkar K, Elbeheiry L, Sammler MJ, Gäher L, Brandenburg B, Dreyer D, Garg D. 2025. **RefinedProsa: Connecting response-time analysis with C verification for interrupt-free schedulers.** Proceedings of the ACM on Programming Languages. 9(PLDI), 73–97.

Spies S, Mück N, Zeng H, Sammler MJ, Lattuada A, Müller P, Dreyer D. 2025. **Destabilizing Iris.** Proceedings of the ACM on Programming Languages. 9(PLDI), 848–873.

Saric Group

Meadowcroft B, Sorichetti V, Ratajczyk E, Perez Verdugo FL, Khalilgharibi N, Mao Y, Palaia I, Šarić A. 2025. **Nonequilibrium remodeling of collagen IV networks in Silico.** PRX Life. 3, 033019.

Muñoz Basagoiti M, Frey FF, Meadowcroft B, Santana de Freitas Amaral M, Prada A, Šarić A. 2025. **A tutorial for mesoscale computer simulations of lipid membranes: Tether pulling, tubulation and fluctuations.** Soft Matter. 21(40), 7736–7756.

Najjar H, Weiß S, Horvath F, Hopl V, Tiffner A, Höbarth L, Söllner J, Fröhlich M, Prantl M, Müller N, Nazarenko Y, Harant S, Weissenböck L, Grabmayr H, Sallinger M, Maltan L, Echefu LV, Radiskovic T, Leopold M, Lindinger S, Humer C, Höglinger C, Krobath H, Renger T, Derler I. 2025. **STIM1-induced widening of non-pore-lining TM interfaces is crucial for Orai1 pore opening.** Cell Reports Physical Science. 6(6), 102623.

Palaia I, Asta AJ, Dutta M, Warren PB, Rotenberg B, Trizac E. 2025. **Charging dynamics of electric double-layer nanocapacitors in mean field.** Physical Review Letters. 135(14), 148002.

Palaia I, Asta AJ, Dutta M, Warren PB, Rotenberg B, Trizac E. 2025. **Poisson-Nernst-Planck charging dynamics of an electric double-layer capacitor: Symmetric and asymmetric binary electrolytes.** Physical Review E. 112(3), 035417.

Parham J, Sorichetti V, Cezanne A, Foo S, Kuo YW, Hoogenberg B, Radoux-Mergault A, Mawdesley E, Gatward LD, Boulanger J, Schulze U, Šarić A, Baum B. 2025. **Temporal and spatial coordination of DNA segregation and cell division in an archaeon.** Proceedings of the National Academy of Sciences. 122(42), e2513939122.

Santana de Freitas Amaral M, Frey FF, Jiang X, Baum B, Šarić A. 2025. **Balancing stability and flexibility when reshaping archaeal membranes.** eLife. 14, 105432.

Sorichetti V, Robin P, Palaia I, Hernandez-Armendariz A, Cuylen-Haering S, Šarić A. 2025. **Charge distribution of the coating brush drives interchromosome attraction.** PRX Life. 3(3), 033010.

Wild R, Wodaczek F, Del Tatto V, Cheng B, Laio A. 2025. **Automatic feature selection and weighting in molecular systems using Differentiable Information Imbalance.** Nature Communications. 16, 270.

Sazanov Group

Herdina AN, Bozdogan A, Aspermair P, Dostalek J, Klausberger M, Lingg N, Cserjan-Puschmann M, Aguilar PP, Auer S, Demirtas H, Andersson J, Lötsch F, Holzer B, Steinrigl A, Thalhammer F, Schellnegger J, Breuer M, Knoll W, Strassl R. 2025. **Bridging basic science and applied diagnostics: Comprehensive viral diagnostics enabled by graphene-based electronic biosensor technology advancements.** Biosensors and Bioelectronics. 267, 116807.

Kaiyrzhanov R, Thompson K, Efthymiou S, Mukushev A, Zharylkassyn A, Prasad C, Karimiani EG, Alvi JR, Niyazov D, Alahmad A, Babaei M, Tajsharghi H, Albash B, Alaqeel A, Charif M, Hashemi N, Heidari M, Kalantar SM, Lenaers G, Mehrjardi MYV, Srinivasan VM, Gowda VK, Mirabutalebi SH, Carere DA, Movahedinia M, Murphy D, Mcfarland R, Abdel-Hamid MS, Elhossini RM, Alavi S, Napier M, Belanger-Quintana A, Prasad AN, Jakobczyk J, Roubertie A, Rupar T, Sultan T, Toosi MB, Sazanov LA, Severino M, Houlden H, Taylor RW, Maroofian R. 2025. **Biallelic NDUFA13 variants lead to a neurodevelopmental phenotype with gradual neurological impairment.** Brain Communications. 7(1), fcae453.

Kiernan K, Taylor DW. 2025. **Visualization of a multi-turnover Cas9 after product release.** Nature Communications. 16, 5681.

Obr M, Percipalle M, Chernikova D, Yang H, Thader A, Pinke G, Porley Esteves D, Mansky LM, Dick RA, Schur FK. 2025. **Distinct stabilization of the human T cell leukemia virus type 1 immature Gag lattice.** Nature Structural & Molecular Biology. 32, 268–276.

Ozleyen A, Duran GN, Dönmez S, Ozbil M, Doveston RG, Tumer TB. 2025. **Identification and inhibition of PIN1-NRF2 protein–protein interactions through computational and biophysical approaches.** Scientific Reports. 15, 8907.

Schanda Group

Castell SD, Fernandez CM, Tumas IN, Margara LM, Miserendino MC, Ceschin DG, Pezza RJ, Monti MR. 2025. **The low-fidelity DNA Pol IV accelerates evolution of pathogenicity genes in Pseudomonas aeruginosa.** Communications Biology. 8, 1148.

Kapoor L, Ruzickova N, Zivadinovic P, Leitner V, Sisak MA, Mweka CN, Dobbelaere JA, Katsaros G, Schanda P. 2025. **Quantifying the carbon footprint of conference travel: The case of NMR meetings.** Magnetic Resonance. 6(2), 243–256.

Knödlstorfer S, Toscano G, Ptaszek AL, Kontaxis G, Napoli F, Schneider J, Maier K, Kapitonova A, Lichtenecker RJ, Schanda P, Konrat R. 2025. **A novel HMBC-CC-HMQC NMR strategy for methyl assignment using triple-13C-labeled α-ketoisovalerate integrated with UCBShift 2.0.** Journal of Molecular Biology. 437(23), 169465.

Lends A, Lamon G, Delcourte L, Sturny-Leclere A, Grélard A, Morvan E, Abdul-Shukkoor MB, Berbon M, Vallet A, Habenstein B, Dufourc EJ, Schanda P, Aimanianda V, Loquet A. 2025. **Molecular distinction of cell wall and capsular polysaccharides in encapsulated pathogens by in situ magic-angle spinning NMR techniques.** Journal of the American Chemical Society. 147(8), 6813–6824.

Maddipatla SA, Sellam NE, Bojan MI, Vedula S, Schanda P, Marx A, Bronstein AM. 2025. **Inverse problems with experiment-guided AlphaFold.** Proceedings of the 42nd International Conference on Machine Learning. ICML: International Conference on Machine Learning, PMLR, vol. 267, 42366–42393.

Rohden D, Toscano G, Schanda P, Lichtenecker RJ. 2025. **Synthesis of selectively 13C/2H/15N-labeled arginine to probe protein conformation and interaction by NMR spectroscopy.** Chemistry - A European Journal. 31(24), e202500408.

Rohden D, Napoli F, Kapitonova A, Tatman B, Lichtenecker RJ, Schanda P. 2025. **Arginine dynamics probed by magic-angle spinning NMR with a specific isotope-labeling scheme.** Journal of Molecular Biology. 437(23), 169379.

Tatman B, Sridharan V, Uttarkabat M, Jaroniec CP, Ernst M, Rovo P, Schanda P. 2025. **Bumps on the road: The way to clean relaxation dispersion magic-angle spinning NMR.** Journal of the American Chemical Society. 147(32), 29315–29326.

Schur Group

Carpentier R, Kim J, Capizzi M, Kim H, Fäßler F, Hansen J, Kim MJ, Denarier E, Blot B, Degennaro M, Labou S, Arnal I, Marcaida MJ, Peraro MD, Kim D, Schur FK, Song J-J, Humbert S. 2025. **Structure of the Huntingtin F-actin complex reveals its role in cytoskeleton organization.** Science Advances. 11(38), eadw4124.

Obr M, Percipalle M, Chernikova D, Yang H, Thader A, Pinke G, Porley Esteves D, Mansky LM, Dick RA, Schur FK. 2025. **Distinct stabilization of the human T cell leukemia virus type 1 immature Gag lattice.** Nature Structural & Molecular Biology. 32, 268–276.

Vorlaufer J, Semenov N, Kreuzinger C, Javoor M, Zens B, Agudelo Duenas N, Tavakoli M, Suplata M, Jahr W, Lyudchik J, Wartak A, Schur FK, Danzl JG. 2025. **Image-based 3D active sample stabilization on the nanometer scale for optical microscopy.** Biophysical Reports. 5(2), 100211.

Seiringer Group

Brooks M, Mitrouskas DJ. 2025. **Asymptotic series for low-energy excitations of the Fröhlich polaron at strong coupling.** Probability and Mathematical Physics. 6(1), 281–325.

Carlen E, Lewin M, Lieb EH, Seiringer R. 2025. **Stability estimate for the Lane–Emden inequality.** Calculus of Variations and Partial Differential Equations. 64(7), 226.

Cárdenas E, Mitrouskas DJ. 2025. **The renormalized Nelson model in the weak coupling limit.** Journal of Physics A: Mathematical and Theoretical. 58(17), 175201.

Fialova M. 2025. **Aharonov–Casher theorems for Dirac operators on manifolds with boundary and APS boundary condition.** Annales Henri Poincare. 26, 2859–2900.

Fialova M, Krejčiřík D. 2025. **Virtual bound states of the Pauli operator with an Aharonov–Bohm potential.** Reviews in Mathematical Physics. 37(6), 2550011.

Gerhát BM, Krejčiřík D, Štampach F. 2025. **Criticality transition for positive powers of the discrete Laplacian on the half line.** Revista Matematica Iberoamericana. 41(3), 1173–1200.

Henheik SJ, Lauritsen AB. 2025. **Universal behavior of the BCS energy gap.** Journal of Spectral Theory. 15(1), 305–352.

Lauritsen AB. 2025. **Almost optimal upper bound for the ground state energy of a dilute Fermi gas via cluster expansion.** Annales Henri Poincare. 26, 203–243.

Mitrouskas DJ. 2025. **The weakly coupled two-dimensional Fermi polaron.** Archive for Rational Mechanics and Analysis. 249(3), 30.

Roos B, Seiringer R. 2025. **BCS critical temperature on half-spaces.** Archive for Rational Mechanics and Analysis. 249, 20.

Roos B, Seiringer R. 2025. **Enhanced superconductivity at a corner for the linear BCS equation.** Forum of Mathematics, Sigma. 13, e71.

Taylor J, Čufar M, Mitrouskas DJ, Seiringer R, Pahl E, Brand J. 2025. **Bound excited states of Fröhlich polarons in one dimension.** Physical Review B. 112(18), 184312.

Serbyn Group

Babkin S, Joecker B, Flensberg K, Serbyn M, Danon J. 2025. **Superconducting proximity effect in two-dimensional hole gases.** Physical Review B. 111(21), 214518.

Brighi P, Ljubotina M, Serbyn M. 2025. **Probing the many-body localized spin-glass phase through quench dynamics.** Physical Review B. 111(22), L220202.

Brighi P, Ljubotina M, Roccati F, Balducci F. 2025. **Finite steady-state current defies non-Hermitian many-body localization.** Physical Review Research. 7(4), L042014.

Desaules J-YM, Iadecola T, Halimeh JC. 2025. **Mass-assisted local deconfinement in a confined Z2 lattice gauge theory.** Physical Review B. 112(1), 014301.

Eder PJ, Kerschbaumer A, Finžgar JR, Medina Ramos RA, Schuetz MJA, Katzgraber HG, Braun S, Mendl CB. 2025. **Quantum-guided cluster algorithms for combinatorial optimization.** 2025 IEEE International Conference on Quantum Computing and Engineering. QCE: International Conference on Quantum Computing and Engineering.

Hrast M, Ljubotina M, Zitnik M. 2025. **Ab initio Auger spectrum of the ultrafast dissociating 2p3/2−1σ* resonance in HCl.** Physical Chemistry Chemical Physics. 27(3), 1473–1482.

Kerschbaumer A, Ljubotina M, Serbyn M, Desaules J-YM. 2025. **Quantum many-body scars beyond the PXP model in Rydberg simulators.** Physical Review Letters. 134(16), 160401.

Petrova E, Ljubotina M, Yalniz G, Serbyn M. 2025. **Finding periodic orbits in projected quantum many-body dynamics.** PRX Quantum. 6(4), 040333.

Vodeb J, Desaules J-YM, Hallam A, Rava A, Humar G, Willsch D, Jin F, Willsch M, Michielsen K, Papić Z. 2025. **Stirring the false vacuum via interacting quantized bubbles on a 5,564-qubit quantum annealer.** Nature Physics. 21, 386–392.

Wang Y, Ren J, Gopalakrishnan S, Vasseur R. 2025. **Superdiffusive transport in chaotic quantum systems with nodal interactions.** Physical Review Letters. 135(16), 166303.

Shigemoto Group

Aguado C, Alfaro-Ruiz R, Martínez-Poyato ML, Moreno-Martínez AE, García-Madrona S, Roldán-Sastre A, Alonso-Gómez P, Fernández M, Puertas-Avendaño R, Shigemoto R, Martemyanov KA, Luján R. 2025. **Developmental regulation of GABAB receptors and downstream molecules in the mouse brain.** Histology and Histopathology. 40(12), 1967–1984.

Martín-Belmonte A, Aguado C, Alfaro-Ruiz R, Kulik A, de la Ossa L, Moreno-Martínez AE, Alberquilla S, García-Carracedo L, Fernández M, Fajardo-Serrano A, Aso E, Shigemoto R, Martín ED, Fukazawa Y, Ciruela F, Luján R. 2025. **Nanoarchitecture of CaV>2.1 channels and GABAB receptors in the mouse hippocampus: Impact of APP/PS1 pathology.** Brain Pathology. 35(2), e13279.

Siegert Group

Alamalhoda M, Leesch F, Giovanetti F, Dunne E, Pilloni G, Caffrey M, O'Keeffe J, Venturino A, Ferretti MT. 2025. **Exploring neural entrainment and synchrony in response to repeated 60 Hz flickering white light in healthy volunteers.** PLOS One. 20(10), e0332310.

Hübschmann V, Korkut M, Venturino A, Maya-Arteaga JP, Siegert S. 2025. **Microglia determine an immune-challenged environment and facilitate ibuprofen action in human retinal organoids.** Journal of Neuroinflammation. 22(1), 98.

Miteva FE, Maes ME, Alamalhoda M, Firoozi A, Colombo G, Siegert S. 2025. **Optic nerve crush does not induce retinal ganglion cell loss in the contralateral eye.** Investigative Ophthalmology & Visual Science. 66(3), 49.

Sixt Group

Dos Reis Rodrigues P, Avellaneda Sarrió M, Canigova N, Gärtner FR, Vaahtomeri K, Riedl M, de Vries I, Merrin J, Hauschild R, Fukui Y, Juanes Garcia A, Sixt MK. 2025. **Migrating immune cells globally coordinate protrusive forces.** Nature Immunology. 26, 1258–1266.

Gawish R, Varada R, Deckert F, Hladik A, Steinbichl L, Cimatti L, Milanovic K, Jain M, Torgasheva N, Tanzer A, De Paepe K, Van De Wiele T, Hausmann B, Lang M, Pechhacker M, Ibrahim N, de Vries I, Brostjan C, Sixt MK, Gasche C, Boon L, Berry D, Jantsch MF, Pereira FC, Vesely C. 2025. **Filamin A editing in myeloid cells reduces intestinal inflammation and protects from colitis.** Journal of Experimental Medicine. 222(9), e20240109.

LI Z, Sixt MK. 2025. **Cell migration: How animal cells run and tumble.** Current Biology. 35(18), R890–R892.

Pan Y, Hochgerner M, Cichon MA, Benezeder T, Bieber T, Wolf P. 2025. **Langerhans cells: Central players in the pathophysiology of atopic dermatitis.** Journal of the European Academy of Dermatology and Venereology. 39(2), 278–289.

Tavano S, Brückner D, Tasciyan S, Tong X, Kardos R, Schauer A, Hauschild R, Heisenberg C-PJ. 2025. **BMP-dependent patterning of ectoderm tissue material properties modulates lateral mesendoderm cell migration during early zebrafish gastrulation.** Cell Reports. 44(3), 115387.

Ucar MC, Zane A, Alanko JH, Sixt MK, Hannezo EB. 2025. **Self-generated chemotaxis of mixed cell populations.** Proceedings of the National Academy of Sciences. 122(34), e2504064122.

Sweeney Group

Jaeger ECB, Vijatovic D, Deryckere A, Zorin N, Nguyen AL, Ivanian G, Woych J, Arnold RC, Ortega Gurrola A, Shvartsman A, Barbieri F, Toma F-A, Gorbsky GJ, Horb ME, Cline HT, Shay TF, Kelley DB, Yamaguchi A, Shein-Idelson M, Tosches MA, Sweeney LB. 2025. **Adeno-associated viral tools to trace neural development and connectivity across amphibians.** Developmental Cell. 60(5), 794–812.e6.

Saenz-De-Juano MD, Silvestrelli G, Buri S, Zinsli LV, Schmelcher M, Ulbrich SE. 2025. **Mastitis-related Staphylococcus aureus-derived extracellular vesicles induce a pro-inflammatory response in bovine monocyte-derived macrophages.** Scientific Reports. 15, 6059.

Tkačik Group

Chiossi HSC, Nardin M, Tkačik G, Csicsvari JL. 2025. **Learning reshapes the hippocampal representation hierarchy.** Proceedings of the National Academy of Sciences. 122(11), e2417025122.

Grah R, Guet CC, Tkačik G, Lagator M. 2025. **Linking molecular mechanisms to their evolutionary consequences: a primer.** Genetics. 229(2), iyae191.

Jain K, Hauschild R, Bochkareva O, Römhild R, Tkačik G, Guet CC. 2025. **Pulsatile basal gene expression as a fitness determinant in bacteria.** Proceedings of the National Academy of Sciences. 122(15), e2413709122.

Kapoor L, Ruzickova N, Zivadinovic P, Leitner V, Sisak MA, Mweka CN, Dobbelaere JA, Katsaros G, Schanda P. 2025. **Quantifying the carbon footprint of conference travel: The case of NMR meetings.** Magnetic Resonance. 6(2), 243–256.

Kavcic B, Tkačik G. 2025. **Token-driven totally asymmetric simple exclusion processes.** Physical Review E. 111(5), 054122.

Perkins ML, Crocker J, Tkačik G. 2025. **Chromatin enables precise and scalable gene regulation with factors of limited specificity.** Proceedings of the National Academy of Sciences. 122(1), e2411887121.

Sokolowski TR, Gregor T, Bialek W, Tkačik G. 2025. **Deriving a genetic regulatory network from an optimization principle.** Proceedings of the National Academy of Sciences. 122(1), e2402925121.

Tkačik G, Wolde PRT. 2025. **Information processing in biochemical networks.** Annual review of biophysics. 54, 249–274.

Zhang CY, Rosa A, Sanguinetti G. 2025. **bioSBM: A random graph model to integrate epigenomic data in chromatin structure prediction.** PRX Life. 3(4), 043006.

Venkataraman Group

Li L, Shi W, Mahajan A, Zhang J, Gómez-Gómez M, Labella J, Louie S, Torres T, Barlow S, Marder SR, Reichman DR, Venkataraman L. 2025. **Too fast for spin flipping: Absence of chirality-induced spin selectivity in coherent electron transport through single-molecule junctions.** Journal of the American Chemical Society. 147(28), 25043–25051.

Shi W, Wang M, Venkataraman L, Tovar JD. 2025. **Single-molecule conductance through hybrid radially and linearly ϖ-conjugated macromolecules reveals an unusual intramolecular ϖ-interaction.** Nano Letters. 25(31), 12101–12106.

York E, Stone I, Shi W, Roy X, Venkataraman L. 2025. **Tuning conductance in BODIPY-based single-molecule junctions.** Nano Letters. 25(36), 13697–13702.

Vicoso Group

Bett VK, Trejo Arellano MS, Vicoso B. 2025. **Chromatin landscape is associated with sex-biased expression and Drosophila-like dosage compensation of the Z chromosome in Artemia franciscana.** Molecular Biology and Evolution. 42(5), msaf085.

Connallon T, Czuppon P, Olito C, Goedert D, Kokko H, Nava-Bolaños A, Nilén S, Svensson EI, Zwoinska M, Dutoit L, Ruzicka F. 2025. **Predicting the prevalence of genetic trade-offs among adaptive substitutions.** Evolution. 79(7), 1243–1255.

Ishikawa Y, Toups MA, Elkrewi MN, Zajac AL, Horne-Badovinac S, Matsubayashi Y. 2025. **Evidence for the major role of PH4αEFB in the prolyl 4-hydroxylation of Drosophila collagen IV.** Matrix Biology. 141(11), 101–113.

Mrnjavac A, Vicoso B. 2025. **Reduced efficacy of selection on a young Z chromosome region of schistosoma japonicum.** Genome Biology and Evolution. 17(2), evaf021.

Mrnjavac A, Vicoso B, Connallon T. 2025. **An extension of Muller's sheltering hypothesis for the evolution of sex chromosome gene content.** Molecular Biology and Evolution. 42(8), msaf177.

Paouneskou D, Baudrimont A, Kelemen RK, Elkrewi MN, Graf A, Moukbel Ali Aldawla S, Kölbl C, Tiemann-Boege I, Vicoso B, Jantsch V. 2025. **BAF-1–VRK-1 mediated release of meiotic chromosomes from the nuclear periphery is important for genome integrity.** Nature Communications. 16, 10446.

Puixeu Sala G, Hayward L. 2025. **The relationship between sexual dimorphism and intersex correlation: Do models support intuition?** Genetics. 231(3), iyaf175.

Toups MA, Vicoso B. 2025. **Insect sex chromosome evolution: Conservation, turnover, and mechanisms of dosage compensation.** Current Opinion in Insect Science. 72, 101411.

Vicoso B. 2025. **Sex chromosome evolution in action in fourspine sticklebacks.** Trends in Ecology and Evolution. 40(8), 728–730.

Vogels Group

Confavreux BJ, Agnes EJ, Zenke F, Sprekeler H, Vogels TP. 2025. **Balancing complexity, performance and plausibility to meta learn plasticity rules in recurrent spiking networks.** PLoS Computational Biology. 21(4), e1012910.

Currin C, Burman RJ, Fedele T, Ramantani G, Rosch RE, Sprekeler H, Raimondo JV. 2025. **Network models incorporating chloride dynamics predict optimal strategies for terminating status epilepticus.** Neurobiology of Disease. 212, 106966.

Naumann LB, Hertäg L, Müller J, Letzkus JJ, Sprekeler H. 2025. **Layer-specific control of inhibition by NDNF interneurons.** Proceedings of the National Academy of Sciences. 122(4), e2408966122.

Paraskevov A. 2025. **Analytical strength-duration curve for the spiking response of the LIF neuron to an alpha-function-shaped excitatory current pulse.** Results in Applied Mathematics. 25, 100548.

Podlaski WF, Agnes EJ, Vogels TP. 2025. **High capacity and dynamic accessibility in associative memory networks with context-dependent neuronal and synaptic gating.** Physical Review X. 15, 011057.

Wagner Group

Avvakumov S, Filakovský M, Opršal J, Tasinato G, Wagner U. 2025. **Hardness of 4-colouring G-colourable graphs.** Proceedings of the 57th Annual ACM Symposium on Theory of Computing. STOC: Symposium on Theory of Computing, 72–83.

Brunck FR, Kwan MA. 2025. **Books, Hallways, and social butterflies: A note on sliding block puzzles.** Mathematical Intelligencer. 47, 52–65.

Lipiński M, Mischaikow K, Mrozek M. 2025. **Morse predecomposition of an invariant set.** Qualitative Theory of Dynamical Systems. 24(1), 5.

Streltsova E, Wagner U. 2025. **Levels in arrangements: Linear relations, the g-matrix, and applications to crossing numbers.** 41st International Symposium on Computational Geometry. SoCG: Symposium on Computational Geometry, LIPIcs, vol. 332, 75.

Waitukaitis Group

Fitzgerald E, Clavaud C, Das D, Lenton IC, Waitukaitis SR. 2025. **Rolling at right angles: Magnetic anisotropy enables dual-anisotropic active matter.** Physical Review E. 112(6), 065418.

Lenton IC, Pertl F, Shafeek LB, Waitukaitis SR. 2025. **A duality between surface charge and work function in scanning Kelvin probe microscopy.** Advanced Materials Interfaces. 12(19), e00521.

Pertl F, Lenton IC, Cramer T, Waitukaitis SR. 2025. **No time for surface charge: How bulk conductivity hides charge patterns from Kelvin probe force microscopy in contact-electrified surfaces.** Physical Review Letters. 135(14), 146202.

Shi S, Hübl M, Grosjean GM, Goodrich CP, Waitukaitis SR. 2025. **Electrostatics overcome acoustic collapse to assemble, adapt, and activate levitated matter.** Proceedings of the National Academy of Sciences. 122(50), e2516865122.

Sobarzo Ponce JCA, Pertl F, Balazs D, Costanzo T, Sauer M, Foelske A, Ostermann M, Pichler CM, Wang Y, Nagata Y, Bonn M, Waitukaitis SR. 2025. **Spontaneous ordering of identical materials into a triboelectric series.** Nature. 638(8051), 664–669.

Stöllner A, Lenton IC, Volosniev A, Millen J, Shibuya R, Ishii H, Rak D, Alpichshev Z, David G, Signorell R, Muller CJ, Waitukaitis SR. 2025. **Using optical tweezers to simultaneously trap, charge, and measure the charge of a microparticle in air.** Physical Review Letters. 135(21), 218202.

Wojtan Group

Chen Y-L, Ly M, Wojtan C. 2025. **Numerical homogenization of sand from grain-level simulations.** ACM Transactions on Graphics. 44(6), 220.

Zilberman Group

Bett VK, Trejo Arellano MS, Vicoso B. 2025. **Chromatin landscape is associated with sex-biased expression and Drosophila-like dosage compensation of the Z chromosome in Artemia franciscana.** Molecular Biology and Evolution. 42(5), msaf085.

Shahzad Z, Hollwey E, Moore JD, Choi J, Cassin-Ross G, Rouached H, Robinson MR, Zilberman D. 2025. **Gene body methylation regulates gene expression and mediates phenotypic diversity in natural Arabidopsis populations.** Nature Plants. 11, 2084–2099.

SSUs

Electron Microscopy Facility

Sobarzo Ponce JCA, Pertl F, Balazs D, Costanzo T, Sauer M, Foelske A, Ostermann M, Pichler CM, Wang Y, Nagata Y, Bonn M, Waitukaitis SR. 2025. **Spontaneous ordering of identical materials into a triboelectric series.** Nature. 638(8051), 664–669.

Vorlaufer J, Semenov N, Kreuzinger C, Javoor M, Zens B, Agudelo Duenas N, Tavakoli M, Suplata M, Jahr W, Lyudchik J, Wartak A, Schur FK, Danzl JG. 2025. **Image-based 3D active sample stabilization on the nanometer scale for optical microscopy.** Biophysical Reports. 5(2), 100211.

Imaging & Optics Facility

Dos Reis Rodrigues P, Avellaneda Sarrió M, Canigova N, Gärtner FR, Vaahtomeri K, Riedl M, de Vries I, Merrin J, Hauschild R, Fukui Y, Juanes Garcia A, Sixt MK. 2025. **Migrating immune cells globally coordinate protrusive forces.** Nature Immunology. 26, 1258–1266.

Jain K, Hauschild R, Bochkareva O, Römhild R, Tkačik G, Guet CC. 2025. **Pulsatile basal gene expression as a fitness determinant in bacteria.** Proceedings of the National Academy of Sciences. 122(15), e2413709122.

Mondal S, Nguyen HTK, Hauschild R, Freunberger SA. 2025. **Marcus kinetics control singlet and triplet oxygen evolving from superoxide.** Nature. 646(8085), 601–605.

Schmitt MT, Kroll J, Ruiz-Fernandez MJA, Hauschild R, Ghosh S, Kameritsch P, Merrin J, Schmid J, Stefanowski K, Thomae AW, Cheng J, Öztan GN, Konopka P, Ortega GC, Penz T, Bach L, Baumjohann D, Bock C, Straub T, Meissner F, Kiermaier E, Renkawitz J. 2025. **Protecting centrosomes from fracturing enables efficient cell navigation.** Science Advances. 11(17), eadx4047.

Stopa V, Sopić M, Li G, Sluimer J, Basílio J, van der Laan SW, Kreil DP, Devaux Y, Hochreiter B. 2025. **Essentials of transcriptomic methods: Navigating through RNA sequencing and beyond.** In: Transcriptomics in Atherosclerosis., 131–172.

Tavakoli M, Lyudchik J, Januszewski M, Vistunou V, Agudelo Duenas N, Vorlaufer J, Sommer CM, Kreuzinger C, Oliveira B, Cenameri A, Novarino G, Jain V, Danzl JG. 2025. **Light-microscopy-based connectomic reconstruction of mammalian brain tissue.** Nature. 642, 398–410.

Tavano S, Brückner D, Tasciyan S, Tong X, Kardos R, Schauer A, Hauschild R, Heisenberg C-PJ. 2025. **BMP-dependent patterning of ectoderm tissue material properties modulates lateral mesendoderm cell migration during early zebrafish gastrulation.** Cell Reports. 44(3), 115387.

Lab Support Facility

Dawson E, Hönigsberger M, Kampleitner N, Grasse AV, Lindorfer L, Robb J, Beikzadeh F, Strahodinsky F, Leitner H, Rajendran H, Schmitt T, Cremer S. 2025. **Altruistic disease signalling in ant colonies.** Nature Communications. 16, 10511.

Lee S, Balazs D, Horta S, Rayaroth Puthiyaveettil A, Ibáñez M. 2025. **Reaction precursor-mediated formation of stable supercrystals in colloidal nanocrystal synthesis: PbTe case.** Proceedings of the MATSUS Spring 2025 Conference. MATSUS: Materials for Sustainable Development Conference, 173.

Sobarzo Ponce JCA, Pertl F, Balazs D, Costanzo T, Sauer M, Foelske A, Ostermann M, Pichler CM, Wang Y, Nagata Y, Bonn M, Waitukaitis SR. 2025. **Spontaneous ordering of identical materials into a triboelectric series.** Nature. 638(8051), 664–669.

Library

Gredler P, Kaier C, Danowski P, Zoyer M, Rieck K, Ferus A, Rosenberger E, Löffler A, Hofer L, Still L. 2025. **Catalogue of criteria for assessing the funding eligibility of Open Science infrastructures,** Zenodo,p.

Machine Shop

Janik M, Roux KER, Borja Espinosa CN, Sagi O, Baghdadi A, Adletzberger T, Calcaterra S, Botifoll M, Garzón Manjón A, Arbiol J, Chrastina D, Isella G, Pop IM, Katsaros G. 2025. **Strong charge-photon coupling in planar germanium enabled by granular aluminium superinductors.** Nature Communications. 16, 2103.

Nanofabrication Facility

Dos Reis Rodrigues P, Avellaneda Sarrió M, Canigova N, Gärtner FR, Vaahtomeri K, Riedl M, de Vries I, Merrin J, Hauschild R, Fukui Y, Juanes Garcia A, Sixt MK. 2025. **Migrating immune cells globally coordinate protrusive forces.** Nature Immunology. 26, 1258–1266.

Lenton IC, Pertl F, Shafeek LB, Waitukaitis SR. 2025. **A duality between surface charge and work function in scanning Kelvin probe microscopy.** Advanced Materials Interfaces. 12(19), e00521.

Lehr S, Brückner D, Minchington T, Greunz M, Merrin J, Hannezo EB, Kicheva A. 2025. **Self-organized pattern formation in the developing mouse neural tube by a temporal relay of BMP signaling.** Developmental Cell. 60(4), 567–580.

Schmitt MT, Kroll J, Ruiz-Fernandez MJA, Hauschild R, Ghosh S, Kameritsch P, Merrin J, Schmid J, Stefanowski K, Thomae AW, Cheng J, Öztan GN, Konopka P, Ortega GC, Penz T, Bach L, Baumjohann D, Bock C, Straub T, Meissner F, Kiermaier E, Renkawitz J. 2025. **Protecting centrosomes from fracturing enables efficient cell navigation.** Science Advances. 11(17), eadx4047.

Nuclear Magnetic Resonance Facility

Tatman B, Sridharan V, Uttarkabat M, Jaroniec CP, Ernst M, Rovo P, Schanda P. 2025. **Bumps on the road: The way to clean relaxation dispersion magic-angle spinning NMR.** Journal of the American Chemical Society. 147(32), 29315–29326.

Pre-Clinical Facility

Schober S, Klee S, Trautinger F. 2025. **The role of institutional ethics committees in Austria: Report of the Commission on Ethics and Scientific Integrity of the Karl Landsteiner University of Health Sciences 2018–2023.** Wiener Klinische Wochenschrift. 137, 432–437.

Vega Zuniga TA, Sumser AL, Symonova O, Koppensteiner P, Schmidt F, Jösch MA. 2025. **A thalamic hub-and-spoke network enables visual perception during action by coordinating visuomotor dynamics.** Nature Neuroscience. 28, 7278.

Others

Graduate School

Alistarh D-A, Ellen F, Fedorov A. 2025. **An almost-logarithmic lower bound for leader election with bounded value contention. 39th International Symposium on Distributed Computing.** DISC: Symposium on Distributed Computing, LIPIcs, vol. 356, 3:1-3:16.

Asadi A, Chatterjee K, Saona Urmeneta RJ, Shafiee A. 2025. **Limit-sure reachability for small memory policies in POMDPs is NP-complete.** The 41st Conference on Uncertainty in Artificial Intelligence. UAI: Conference on Uncertainty in Artificial Intelligence, PMLR, vol. 286, 238–247.

Asadi A, Chatterjee K, De Raaij J. 2025. **Lower bound on Howard policy iteration for deterministic Markov Decision Processes.** The 41st Conference on Uncertainty in Artificial Intelligence. UAI: Conference on Uncertainty in Artificial Intelligence, PMLR, vol. 286, 223–232.

Asadi A, Brice L, Chatterjee K, Thejaswini KS. 2025. **ε-stationary Nash equilibria in multi-player stochastic graph games.** 45th Annual Conference on Foundations of Software Technology and Theoretical Computer Science. FSTTCS: Conference on Foundations of Software Technology and Theoretical Computer Science, LIPIcs, vol. 360, 9:1-9:17.

Attia L, Oliu-Barton M, Saona Urmeneta RJ. 2025. **Marginal values of a stochastic game.** Mathematics of Operations Research. 50(1), 482–505.

Babic D, Abualia R, Fiedler L, Qi L, Tellier F, Smoljan A, Rakusova H, Valošek P, Han H, Benková E, Faure JD, Friml J. 2025. **Biosynthesis of very long-chain fatty acids is required for Arabidopsis auxin-mediated embryonic and post-embryonic development.** Plant Journal. 123(3), e70396.

Babkin S, Joecker B, Flensberg K, Serbyn M, Danon J. 2025. **Superconducting proximity effect in two-dimensional hole gases.** Physical Review B. 111(21), 214518.

Baier F, Reinhard K, Nuttin B, Sans-Dublanc A, Liu C, Tong V, Murmann JS, Wierda K, Farrow K, Hoekstra HE. 2025. **The neural basis of species-specific defensive behaviour in Peromyscus mice.** Nature. 645, 439–447.

Barrault L, Bugnet LA, Mathis S, Mombarg JSG. 2025. **Exploring the probing power of γ Dor's inertial dip for core magnetism: The case of a toroidal field.** Astronomy & Astrophysics. 701, A253.

Bhargava M, Schreck C, Freire M, Hugron PA, Lefebvre S, Sellán S, Bickel B. 2025. **Mesh simplification for unfolding.** Computer Graphics Forum. 44(1), e15269.

Boker U, Henzinger TA, Mazzocchi NA, Sarac NE. 2025. **Safety and liveness of quantitative properties and automata.** Logical Methods in Computer Science. 21(2), 13149.

Castell SD, Fernandez CM, Tumas IN, Margara LM, Miserendino MC, Ceschin DG, Pezza RJ, Monti MR. 2025. **The low-fidelity DNA Pol IV accelerates evolution of pathogenicity genes in Pseudomonas aeruginosa.** Communications Biology. 8, 1148.

Chen Y-L, Ly M, Wojtan C. 2025. **Numerical homogenization of sand from grain-level simulations.** ACM Transactions on Graphics. 44(6), 220.

Claeyssens A, Adamo A, Messa M, Dessauges-Zavadsky M, Richard J, Kramarenko I, Matthee JJ, Naidu RP. 2025. **Tracing star formation across cosmic time at tens of parsec-scales in the lensing cluster field Abell 2744.** Monthly Notices of the Royal Astronomical Society. 537(3), 2535–2558.

Dvorak M, Kolmogorov V. 2025. **Generalized minimum 0-extension problem and discrete convexity.** Mathematical Programming. 209, 279–322.

Eilers AC, Yue M, Matthee JJ, Hennawi JF, Davies FB, Simcoe RA, Teague R, Bordoloi R, Brammer G, Kang Y, Kashino D, Mackenzie R, Naidu RP, Navarrete B. 2025. **The light echo of a high-redshift quasar mapped with Lyα tomography.** The Astrophysical Journal Letters. 991(2), L40.

Hawaldar S, Khaire SS, Delsing P, Suri B. 2025. **On-demand single-microwave-photon source in a superconducting circuit with wideband frequency tunability.** Physical Review Applied. 23(4), 044042.

Henzinger TA, Karimi M, Thejaswini KS. 2025. **Privacy-preserving runtime verification.** Proceedings of the 2025 ACM SIGSAC Conference on Computer and Communications Security. CCS: Conference on Computer and Communications Security, 2774–2787.

Hoffmann C, Pietrzak KZ. 2025. **Watermarkable and zero-knowledge Verifiable Delay Functions from any proof of exponentiation.** 28th IACR International Conference on Practice and Theory of Public-Key Cryptography. PKC: Public-Key Cryptography, LNCS, vol. 15674, 36–66.

Hübl M, Goodrich CP. 2025. **Accessing semiaddressable self-assembly with efficient structure enumeration.** Physical Review Letters. 134(5), 058204.

Kapoor L, Ruzickova N, Zivadinovic P, Leitner V, Sisak MA, Mweka CN, Dobbelaere JA, Katsaros G, Schanda P. 2025. **Quantifying the carbon footprint of conference travel: The case of NMR meetings.** Magnetic Resonance. 6(2), 243–256.

Kim D, Wang X, Vargas S, Zhong P, King DS, Inizan TJ, Cheng B. 2025. **A universal augmentation framework for long-range electrostatics in machine learning interatomic potentials.** Journal of Chemical Theory and Computation. 21(24), 12709–12724.

Knödlstorfer S, Toscano G, Ptaszek AL, Kontaxis G, Napoli F, Schneider J, Maier K, Kapitonova A, Lichtenecker RJ, Schanda P, Konrat R. 2025. **A novel HMBC-CC-HMQC NMR strategy for methyl assignment using triple-13C-labeled α-ketoisovalerate integrated with UCBShift 2.0.** Journal of Molecular Biology. 437(23), 169465.

Kolmogorov V, Naldi S, Zapata J. 2025. **Certifying solutions of degenerate semidefinite programs.** SIAM Journal on Optimization. 35(3), 1630–1654.

Kopfová L, Tkadlec J. 2025. **Colonization times in Moran process on graphs.** PLoS computational biology. 21(5), e1012868.

Kurtic E, Kuznedelev D, Frantar E, Goinv M, Pandit S, Agarwalla A, Nguyen T, Marques A, Kurtz M, Alistarh D-A. 2025. **Sparse Fine-Tuning for Inference Acceleration of Large Language Models.** In: Enhancing LLM Performance. Efficacy, Fine-Tuning, and Inference Techniques. Machine Translation: Technologies and Applications, 83–97.

Maddipatla SA, Sellam NE, Bojan MI, Vedula S, Schanda P, Marx A, Bronstein AM. 2025. **Inverse problems with experiment-guided AlphaFold.** Proceedings of the 42nd International Conference on Machine Learning. ICML: International Conference on Machine Learning, PMLR, vol. 267, 42366–42393.

Milivojev N, Scaramuzza F, Brum PO, Velastegui Gamboa CL, Andreatta G, Raible F, Tessmar-Raible K. 2025. **Light-modulated stem cells in the camera-type eye of an annelid model for adult brain plasticity.** Nature Communications. 16, 9861.

Monzer A, Friml J. 2025. **Historical and mechanistic perspective on ABP1-TMK1-mediated cell surface auxin signaling.** npj Science of Plants. 1(1), 2.

Mukhopadhyay S, Lancheros Naranjo DA, Senior JL, Higginbotham AP. 2025. **Dual relaxation oscillations in a Josephson-junction array.** Physical Review Applied. 24, 014035.

Nessonov N, Ngo NT. 2025. **Indecomposable characters of inductive limits of symmetric groups.** Representation Theory. 29(8), 256–288.

Petrova E, Ljubotina M, Yalniz G, Serbyn M. 2025. **Finding periodic orbits in projected quantum many-body dynamics.** PRX Quantum. 6(4), 040333.

Riabov V. 2025. **Mesoscopic eigenvalue statistics for Wigner-type matrices.** Annales de l'institut Henri Poincare (B) Probability and Statistics. 61(1), 129–154.

Shiva Kumar A, Maslov M, Lemeshko M, Volosniev A, Alpichshev Z. 2025. **Massive Dirac-Pauli physics in lead-halide perovskites.** npj Quantum Materials. 10, 37.

Tavakoli M, Lyudchik J, Januszewski M, Vistunou V, Agudelo Duenas N, Vorlaufer J, Sommer CM, Kreuzinger C, Oliveira B, Cenameri A, Novarino G, Jain V, Danzl JG. 2025. **Light-microscopy-based connectomic reconstruction of mammalian brain tissue.** Nature. 642, 398–410.

Vorlaufer J, Semenov N, Kreuzinger C, Javoor M, Zens B, Agudelo Duenas N, Tavakoli M, Suplata M, Jahr W, Lyudchik J, Wartak A, Schur FK, Danzl JG. 2025. **Image-based 3D active sample stabilization on the nanometer scale for optical microscopy.** Biophysical Reports. 5(2), 100211.

Watson J, Vargas Barroso VM, Morse R, Navas Olivé AC, Tavakoli M, Danzl JG, Tomschik M, Rössler K, Jonas PM. 2025. **Human hippocampal CA3 uses specific functional connectivity rules for efficient associative memory.** Cell. 188(2), 501–514.e18.

Zhao X, Li M, Jia M, Fiedler C, Nan B, Yang D, Li L, Yuan Z, Song H, Liu Y, Ibáñez M, Wang Z, Shan C, Cabot A. 2025. **Low-dimensional structure modulation in Ag8SnSe6 for enhanced thermoelectric performance.** Advanced Functional Materials. 35(24), 2421449.

Scientific Data

Barton Group

Surendranadh P, Sachdeva H. 2025. **Mathematica notebook and Fortran code for 'Effect of assortative mating and sexual selection on polygenic barriers to gene flow.'** ISTA, 10.15479/AT:ISTA:17344.

Cremer Group

Cremer S. 2025. **Altruistic disease signalling in ant colonies,** ISTA, 10.15479/AT-ISTA-20471.

Csicsvari Group

Chiossi HSC. 2025. **Research data for the publication 'Learning reshapes the hippocampal representation hierarchy,'** ISTA, 10.15479/AT:ISTA:18991.

Danzl Group

Danzl JG, Lyudchik J, Kreuzinger C. 2025. **Light-microscopy based connectomic reconstruction of mammalian brain tissue,** ISTA, 10.15479/AT:ISTA:18697.

Danzl JG, Kreuzinger C. 2025. **Research Data for the publication 'Super-resolution expansion microscopy in plant roots,'** ISTA, 10.15479/AT:ISTA:18837.

Graduate School

Agafonova S. 2025. **Research Data for: 'One-milligram torsional pendulum toward experiments at the quantum-gravity interface,'** ISTA, 10.15479/AT-ISTA-20842.

Becker LM, Schanda P. 2025. **Data for 'Aromatic Ring Flips Reveal Reshaping of Protein Dynamics in Crystals and Complexes,'** ISTA, 10.15479/AT-ISTA-20641.

Chiossi HSC. 2025. **Research data for the publication 'Learning reshapes the hippocampal representation hierarchy,'** ISTA, 10.15479/AT:ISTA:18991.

Janik M. 2025. **Research data for publication 'Strong charge-photon coupling in planar germanium enabled by granular aluminium superinductors,'** ISTA, 10.15479/AT:ISTA:18886.

Saez Mollejo J. 2025. **Exchange anisotropies in microwave-driven singlet-triplet qubits,** ISTA, 10.15479/AT:ISTA:19409.

Saez Mollejo J. 2025. **Automated All-RF Tuning for Spin Qubit Readout and Control,** ISTA, 10.15479/AT:ISTA:19885.

Guet Group

Jain K, Hauschild R, Bochkareva O, Römhild R, Tkačik G, Guet CC. 2025. **Data for 'Pulsatile basal gene expression as a fitness determinant in bacteria,'** ISTA, 10.15479/AT:ISTA:19294.

Hosten Group

Agafonova S. 2025. **Research Data for: 'One-milligram torsional pendulum toward experiments at the quantum-gravity interface,'** ISTA, 10.15479/AT-ISTA-20842.

Imaging & Optics Facility

Jain K, Hauschild R, Bochkareva O, Römhild R, Tkačik G, Guet CC. 2025. **Data for 'Pulsatile basal gene expression as a fitness determinant in bacteria,'** ISTA, 10.15479/AT:ISTA:19294.

Katsaros Group

Janik M. 2025. **Research data for publication 'Strong charge-photon coupling in planar germanium enabled by granular aluminium superinductors,'** ISTA, 10.15479/AT:ISTA:18886.

Saez Mollejo J. 2025. **Exchange anisotropies in microwave-driven singlet-triplet qubits,** ISTA, 10.15479/AT:ISTA:19409.

Saez Mollejo J. 2025. **Automated All-RF Tuning for Spin Qubit Readout and Control,** ISTA, 10.15479/AT:ISTA:19885.

Kondrashov Group

Jain K, Hauschild R, Bochkareva O, Römhild R, Tkačik G, Guet CC. 2025. **Data for 'Pulsatile basal gene expression as a fitness determinant in bacteria,'** ISTA, 10.15479/AT:ISTA:19294.

Loose Group

Springstein BL. 2025. **Files for 'Evolutionary repurposing of a DNA segregation machinery into a cytoskeletal system controlling cyanobacterial cell shape,'** ISTA, 10.15479/AT:ISTA:19915.

Schanda Group

Becker LM, Schanda P. 2025. **Data for 'Aromatic Ring Flips Reveal Reshaping of Protein Dynamics in Crystals and Complexes,'** ISTA, 10.15479/AT-ISTA-20641.

Schanda P. 2025. **Arginine Dynamics Probed by Magic-Angle Spinning NMR with a Specific Isotope-Labeling Scheme,** ISTA, 10.15479/AT-ISTA-19956.

Schanda P. 2025. **Data of: 'Quantifying the carbon footprint of conference travel: the case of NMR meetings,'** ISTA, 10.15479/AT-ISTA-20242.

Tatman B. 2025. **Dataset for 'Bumps on the Road: The Way to Clean Relaxation Dispersion in the Solid State,'** ISTA, 10.15479/AT-ISTA-19696.

Serbyn Group

Desaules J-YM. 2025. **Research Data for 'Quantum Many-Body Scars beyond the PXP Model in Rydberg Simulators,'** ISTA, 10.15479/AT:ISTA:19623.

Desaules J-YM. 2025. **Research Data for 'Mass-Assisted Local Deconfinement in a Confined Z2 Lattice Gauge Theory,'** ISTA, 10.15479/AT:ISTA:19791.

Tkačik Group

Chiossi HSC. 2025. **Research data for the publication 'Learning reshapes the hippocampal representation hierarchy,'** ISTA, 10.15479/AT:ISTA:18991.

Jain K, Hauschild R, Bochkareva O, Römhild R, Tkačik G, Guet CC. 2025. **Data for 'Pulsatile basal gene expression as a fitness determinant in bacteria,'** ISTA, 10.15479/AT:ISTA:19294.

Tkačik G. 2025. **Token-driven totally asymmetric simple exclusion processes,** ISTA 10.15479/AT:ISTA:19658.

Vicoso Group

Layana Franco LA, Toups MA, Vicoso B. 2025. **Causes and consequences of sex-chromosome turnovers in Diptera,** ISTA, 10.15479/AT-ISTA-20780.


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