

Felix Leditzky

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Employment

Jan 2021 – present	Assistant Professor , University of Illinois Urbana-Champaign
Dec 2019 – Dec 2020	Postdoctoral Fellow , University of Waterloo & Perimeter Institute for Theoretical Physics
Nov 2016 – Nov 2019	Postdoctoral Research Associate , University of Colorado Boulder

Education

Oct 2013 – Oct 2016	PhD in Mathematics , University of Cambridge
Oct 2006 – Apr 2013	Diploma in Physics , University of Vienna
Oct 2006 – Feb 2012	Diploma in Mathematics , University of Vienna

Research interests

Quantum information theory, in particular mathematical and information-theoretic aspects:

- Additivity problems in quantum information theory, quantum channels and their capacities, quantum Shannon theory, relative entropies, strong converse theorems, second order asymptotics
- Multipartite entanglement, symmetries and representation theory, group theory
- Semidefinite programming, convex optimization theory, machine learning techniques, global optimization techniques

Selected publications

Complete list available in [full academic CV](#).

- G. A. Hamilton and F. Leditzky. “[Probing Multipartite Entanglement Through Persistent Homology](#)”. *Communications in Mathematical Physics* 405.5 (2024), p. 125. arXiv: [2307.07492 \[quant-ph\]](#)
- E. Chitambar and F. Leditzky. “[On the Duality of Teleportation and Dense Coding](#)”. *IEEE Transactions on Information Theory* 70.5 (2024), pp. 3529–3537. arXiv: [2302.14798 \[quant-ph\]](#)
- F. Leditzky, D. Leung, V. Siddhu, G. Smith, and J. A. Smolin. “[Generic Nonadditivity of Quantum Capacity in Simple Channels](#)”. *Physical Review Letters* 130 (20 2023), p. 200801. arXiv: [2202.08377 \[quant-ph\]](#)
- F. Leditzky. “[Optimality of the pretty good measurement for port-based teleportation](#)”. *Letters in Mathematical Physics* 112.5 (2022), p. 98. arXiv: [2008.11194 \[quant-ph\]](#)
- J. Bausch and F. Leditzky. “[Error Thresholds for Arbitrary Pauli Noise](#)”. *SIAM Journal on Computing* 50.4 (2021), pp. 1410–1460. arXiv: [1910.00471 \[quant-ph\]](#)
- F. Leditzky, M. A. Alhejji, J. Levin, and G. Smith. “[Playing Games with Multiple Access Channels](#)”. *Nature Communications* 11, 1497 (2020). arXiv: [1909.02479 \[quant-ph\]](#)

Selected grants & awards

Complete list available in [full academic CV](#).

Aug 2023 – Aug 2025	Lincoln Excellence for Assistant Professor (LEAP) Scholar, UIUC, \$10,000
Apr 2023 – Feb 2025	UIUC Campus Research Board Award No. RB23076 (PI), \$30,000 , Arnold O. Beckman Research Award
Jan 2023 – Jan 2025	David H. Blackwell Scholar, UIUC, \$12,000
Sep 2021 – Aug 2025	National Science Foundation No. 2137953 (Co-PI), \$388,377 (total award amount: \$2,499,999)
Aug 2021 – Aug 2023	IBM-Illinois Discovery Accelerator Institute Grant (PI), \$408,450 (total award amount: \$8,750,000)
Apr 2015	Smith-Knight and Rayleigh-Knight Prize, University of Cambridge, £250

Supervision & Mentoring

- **Postdocs:** Jacob Beckey (2024-2027), Stefano Chessa (2022-2024; jointly advised with Eric Chitambar)
- **Graduate students:** Sujeet Bhalerao, Haneul Kim (jointly advised with Eric Chitambar), Christopher Vairogs, Stephen Zhou (all current)
- **Undergraduate students:** Yulie Arad (current), Nouralhoda Bayat (2021-2022), Mayank Bhatia (current), Mason Camp (2022)

Campus and departmental service

Jan 2021 – present	IQUIST Science Advisory Board, UIUC
Aug 2023 – May 2024	Climate, Equity & Inclusion Committee, Department of Mathematics, UIUC
Aug 2022 – May 2023	Strategic Planning Committee, Department of Mathematics, UIUC
Aug 2021 – May 2022	Faculty search committee, Department of Mathematics, UIUC

Professional service

- Lead organizer for conference [Beyond IID in Information Theory](#), Jul 29-Aug 2, 2024, UIUC
- Co-organizer committee for workshop [QLA meets QIT II](#), Nov 3-4, 2022, Chicago, USA
- Co-organizer for conference [TQC](#), July 11-14, 2022, UIUC
- Co-organizer for conference [QIP](#), Jan 14-18, 2019, University of Colorado Boulder
- Lead organizer for workshop [Rocky Mountain Summit on Quantum Information](#), Jun 25-29, 2018, University of Colorado Boulder

Editorial services

Mar 2022 – present	Editor for Quantum
Nov 2020 – present	Editor for Illinois Journal of Mathematics