Curriculum Vitae

Contact Information

Name	Igor Boettcher
Affiliation	Department of Physics University of Alberta CCIS 3-193 Edmonton, AB T6G 2E1 Canada
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Academic positions

since Jul 2023	**Theoretical Physics Institute**, University of Alberta, Canada Director
since Feb 2021	**University of Alberta**, Canada Assistant Professor
Oct 2018 – Jan 2021	**University of Maryland**, USA Postdoctoral Fellow with Alexey Gorshkov
Oct 2015 – Sep 2018	**Simon Fraser University**, Canada Postdoctoral Fellow with Igor Herbut
Dec 2014 – Sep 2015	**Heidelberg University**, Germany Postdoctoral Fellow with Christof Wetterich

Education

Aug 2011 – Dec 2014	**Heidelberg University**, Germany PhD in Physics (summa cum laude–highest distinction) Thesis: *Dimensional BCS-BEC crossover in ultracold Fermi gases* Supervisor: Christof Wetterich
Oct 2006 – Jul 2011	**Heidelberg University**, Germany Diploma in Physics (overall grade 1.0, with distinction) Thesis: *Precision observables for ultracold quantum gases* Supervisor: Christof Wetterich

Igor Boettcher, University of Alberta

Publication list

Highlights:

- 41 publications and preprints
- 1 Science
- 2 Nature Communications
- 10 Physical Review Letters
- 1 Physical Review Letters cover
- 1 Physical Review A Rapid Communication
- 1 Physical Review A Letter
- 3 Featured in "Physics"
- 7 Editors' suggestions
- 19 first author, 6 last author, 4 single author

Total citations: 1800+, h-index: 24 (Google Scholar)

Ten most important publications

10 A Chen, H Brand, T Helbig, T Hofmann, S Imhof, A Fritzsche, T Kießling, A Stegmaier, LK Upreti, T Neupert, T Bzdušek, M Greiter, R Thomale, **I Boettcher**
Hyperbolic matter in electrical circuits with tunable complex phases
Nature Communications **14**, 622 (2023)

9 **I Boettcher**, AV Gorshkov, AJ Kollár, J Maciejko, S Rayan, R Thomale
Crystallography of hyperbolic lattices
Phys. Rev. B **105**, 125118 (2022), **Editors' Suggestion**

8 **I Boettcher**, P Bienias, R Belyansky, AJ Kollár, AV Gorshkov
Quantum simulation of hyperbolic space with circuit quantum electrodynamics: From graphs to geometry
Phys. Rev. A **102**, 032208 (2020), **Editors' Suggestion**
Featured in Physics: Physics **13**, s114 (2020)

7 **I Boettcher**
Interplay of topology and electron-electron interactions in Rarita-Schwinger-Weyl semimetals
Phys. Rev. Lett. 124, 127602 (2020), **On the Cover**

6 **I Boettcher**, IF Herbut
Unconventional Superconductivity in Luttinger Semimetals: Theory of Complex Tensor Order and the Emergence of the Uniaxial Nematic State
Phys. Rev. Lett. 120, 057002 (2018)

5 PA Murthy, M Neidig, R Klemt, L Bayha, **I Boettcher**, T Enss, M Holten, G Zürn, PM Preiss, S Jochim
High temperature pairing in a strongly interacting two-dimensional Fermi gas
Science 359, 452 (2018)

4 **I Boettcher**, M Holzmann
Quasi-long-range order in trapped two-dimensional Bose gases
Phys. Rev. A **94**, 011602(R) (2016), **Rapid Communication**

3 **I Boettcher**, L Bayha, D Kedar, PA Murthy, M Neidig, MG Ries, AN Wenz, G Zürn, S Jochim, T Enss
Equation of State of Ultracold Fermions in the 2D BEC-BCS Crossover Region
Phys. Rev. Lett. 116, 045303 (2016), **Editors' Suggestion**
Featured in Physics: Physics **9**, 10 (2016)

2 PA Murthy, **I Boettcher**, L Bayha, M Holzmann, D Kedar, M Neidig, MG Ries, AN Wenz, G Zürn, S Jochim
Observation of the Berezinskii-Kosterlitz-Thouless Phase Transition in an Ultracold Fermi Gas
Phys. Rev. Lett. 115, 010401 (2015), **Editors' Suggestion**

1 MG Ries, AN Wenz, G Zürn, L Bayha, **I Boettcher**, D Kedar, PA Murthy, M Neidig, T Lompe, S Jochim
Observation of Pair Condensation in the Quasi-2D BEC-BCS Crossover
Phys. Rev. Lett. 114, 230401 (2015), **Editors' Suggestion**
Featured in Physics: Physics **8**, 53 (2015)