

CURRICULUM VITAE

Personal Information

Name	Igor Boettcher
Affiliation	Joint Quantum Institute University of Maryland Room 2343, Atlantic Building College Park, MD, 20742, USA
E-Mail	iboettch@umd.edu
Website	http://www.terpconnect.umd.edu/~iboettch/



Academic positions

starting Feb 2021	University of Alberta , Canada Assistant Professor
since Oct 2018	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: <i>Dimensional BCS-BEC crossover in ultracold Fermi gases</i> , Supervisor: Christof Wetterich
---------------------	--

Oct 2006 – Jul 2011 **Heidelberg University**, Germany
Diploma in Physics (overall grade 1.0, with distinction)
Precision observables for ultracold quantum gases
Supervisor: Christof Wetterich

Research visits

Oct – Dec 2013 **University of Innsbruck**, Austria
Research visit at the invitation of Sebastian Diehl

Funding and Awards

Oct 2015 – Sep 2017 Research Fellowship by German Research Foundation (DFG),
Title: *Fermionic quantum matter in atomic gases and solid
state systems* ~ EUR 90 000

Jan 2012 – Dec 2014 PhD scholarship by Graduate Academy Heidelberg ~
EUR 40 000

Jul 2011 Otto-Haxel-Prize 2011 “for an outstanding diploma thesis”
(“für eine herausragende Diplomarbeit”), awarded by the Fac-
ulty of Physics and Astronomy, Heidelberg University

Contributions to scientific community

2011 – 2015 Organization of the weekly research seminar *Cold Quantum
Coffee* at Heidelberg University with local and invited speak-
ers

since 2014 Referee for DOE, Nature, PRL, PRX, PRA, PRB, JPhys A,
JPhys B

Dated: May 22, 2020

TEN MOST IMPORTANT PUBLICATIONS

I Boettcher, P Bienias, R Belyansky, AJ Kollar, 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)

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

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)

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)

I Boettcher, IF Herbut
*Anisotropy induces non-Fermi-liquid behavior and nematic magnetic order in
three-dimensional Luttinger semimetals*
Phys. Rev. B **95**, 075149 (2017), Editors' Suggestion

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

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)

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

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)

I Boettcher, JM Pawłowski, S Diehl

Ultracold atoms and the Functional Renormalization Group

Nucl. Phys. B (Proc. Suppl.) **228**, 63-135 (2012)

*These authors contributed equally.