

## Biographical Sketch

Heiko Hergert

Assistant Professor of Physics

Facility for Rare Isotope Beams and Dept. of Physics & Astronomy, Michigan State University

## Education and Training

TU Darmstadt, Germany, Theoretical Nuclear Physics: Dr. rer. nat., 2004-2008

TU Darmstadt, Germany, Theoretical Nuclear Physics: Diplom, 2003-2004

## Research and Professional Experience

Assistant Professor	FRIB and Dept. of Physics & Astronomy, MSU	2015-
FRIB Theory Fellow	FRIB, MSU	2014-2015
Postdoc	Dept. of Physics, The Ohio State University	2011-2014
Postdoc	NSCL, MSU	2009-2011
Postdoc	Institute for Nuclear Physics, TU Darmstadt	2008-2009

## Publications

34 total refereed publications; 17 as 1<sup>st</sup> or 2<sup>nd</sup> author; h-index = 23 (Google Scholar), 21 (Publons/Web of Knowledge)

10. elected publications relevant to the present proposal:

1. “*Non-Empirical Interactions for the Nuclear Shell Model: An Update*”, S. R. Stroberg, H. Hergert, S. K. Bogner, J. D. Holt, Ann. Rev. Nucl. Part. Sci. 69, in press, arXiv: 1902.06154 [nucl-th]
2. “*Generator-coordinate reference states for spectra and  $0\nu\beta\beta$  decay in the in-medium similarity renormalization group*”, J. M. Yao, J. Engel, L. J. Wang, C. F. Jiao, H. Hergert, Phys. Rev. C 98, 054311 (2018), arXiv: 1807.11053 [nucl-th]
3. “*Bogoliubov Many-Body Perturbation Theory for Open-Shell Nuclei*”, A. Tichai, P. Arthuis, T. Duguet, V. Somà, H. Hergert, R. Roth, Phys. Lett. B 786, 195 (2018), arXiv: 1806.10931 [nucl-th]
4. “*Ab Initio Electromagnetic Observables with the In-Medium Similarity Renormalization Group*”, N. M. Parzuchowski, S. R. Stroberg, P. Navrátil, H. Hergert, S. K. Bogner, Phys. Rev. C 96, 034324 (2017), arXiv: 1705.05511 [nucl-th]
5. “*Ab Initio Description of Open-Shell Nuclei: Merging No-Core Shell Model and In-Medium Similarity Renormalization Group*”, E. Gebrerufael, K. Vobig, H. Hergert, R. Roth, Phys. Rev. Lett. 118, 152503 (2017), arXiv: 1610.05254 [nucl-th]
6. “*In-Medium Similarity Renormalization Group for Closed- and Open-Shell Nuclei*”, H. Hergert, Phys. Scripta 92, 023002 (2017), arXiv: 1607.06882 [nucl-th]

7. “*A Nucleus-Dependent Valence-Space Approach to Nuclear Structure*”, S. R. Stroberg, A. Calci, H. Hergert, J. D. Holt, S. K. Bogner, R. Roth, and A. Schwenk, Phys. Rev. Lett. 118, 032502 (2017), arXiv: 1607.03229 [nucl-th]
8. “*Ground and Excited States of Doubly Open-Shell Nuclei From Ab Initio Valence-Space Hamiltonians*”, S. R. Stroberg, H. Hergert, J. D. Holt, S. K. Bogner, A. Schwenk, Phys. Rev. C 93, 051301(R) (2016), arXiv: 1511.02802 [nucl-th]
9. “*The In-Medium Similarity Renormalization Group: A New Ab Initio Method for Nuclei*”, H. Hergert, S. K. Bogner, T. D. Morris, A. Schwenk, K. Tsukiyama, Phys. Rept. 621, 165 (2016), arXiv: 1512.06956 [nucl-th]
10. “*Ab-Initio Multi-Reference In-Medium Similarity Renormalization Group Calculations of Calcium and Nickel Isotopes*”, H. Hergert, S. K. Bogner, T. D. Morris, S. Binder, A. Calci, J. Langhammer, and R. Roth, Phys. Rev. C 90, 041302(R) (2014), arXiv: 1408.6555 [nucl-th]

### **Synergistic Activities**

1. *Co-Organizer*: Nuclear Structure 2018, East Lansing, MI, USA, Advances in Rare Isotope Science (ARIS) 2017, Keystone, CO, USA
2. *Co-Organizer/Instructor*: 2020 TALENT Course 4: DFT and Self-Consistent Methods (planned)
3. *Referee*: Ann. Phys., Eur. Phys. J. A, J. Phys. G, Nucl. Phys. A, Phys. Lett. B, Phys. Rev. C, Phys. Rev. Lett.
4. *Proposal Reviewer*: US Department of Energy
5. *Member*: SciDAC-4 NUCLEI Collab., DoE Double Beta Decay (DBD) Topical Collab.

### **Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers**

Collaborators and Co-editors:

P. Arthuis (U Surrey), C. Barbieri (U Surrey), S. K. Bogner (NSCL/FRIB), B. A. Brown (NSCL/FRIB), A. Calci<sup>1</sup> (TRIUMF), T. Duguet (CEA Saclay), J. Engel (U North Carolina– Chapel Hill), K. Fosse (ANL & NSCL/FRIB), E. Gebrerufael<sup>1</sup> (TU Darmstadt), M. Hjorth-Jensen (NSCL/FRIB & U Oslo), J. D. Holt (TRIUMF), C. F. Jiao (San Diego State U), V. Lapoux (CEA Saclay), E. Leistenschneider (TRIUMF), T. D. Morris (U Tennessee–Knoxville & ORNL), P. Navrátil (TRIUMF), P. Papakonstantinou (IBS Daejeon), R. Roth (TU Darmstadt), A. Schwenk (TU Darmstadt), V. Somà (CEA Saclay), S. R. Stroberg (U Washington), A. Tichai (CEA Saclay), K. Tsukiyama<sup>1</sup> (CNS, U Tokyo), K. Vobig<sup>1</sup> (TU Darmstadt), L. J. Wang (U North Carolina–Chapel Hill), J. M. Yao (NSCL/FRIB)

<sup>1</sup> moved to industry

Graduate and Postdoctoral Advisors and Advisees:

*Advisors:* R. Roth (TU Darmstadt, graduate), S. K. Bogner (NSCL/FRIB, postdoctoral), R. J. Furnstahl (OSU, postdoctoral)

Postdocs Supervised: K. Fosse, R. Wirth, J. M. Yao

Graduate Students Supervised: J. Davison, J. Hill, B. Zhu