

Jiangming Yao

Curriculum vitae

Research Associate
FRIB, Michigan State University
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Research Interest

- ab initio calculation of atomic nuclei
- Nuclear weak processes and neutrinoless double beta decay
- Density functional theory for nuclear spectroscopy
- High-performance computing and machine learning in nuclear physics
- Nucleosynthesis and neutron stars

Professional experience

- 2018– **Postdoctoral Research Associate**, FRIB/NSCL, Michigan State University.
2015–2017 **Postdoctoral Research Associate**, University of North Carolina at Chapel Hill.
2013–2015 **Assistant Professor**, Tohoku University, Japan.
2011–2012 **Postdoc**, Université Libre de Bruxelles, Belgium.
2009–2017 **Professor**, Southwest University, China.

Education

- 2004–2009 **PhD in Nuclear and Particle Physics**, Peking University, China.
Thesis: Covariant density functional theory for nuclear spectroscopy
Supervisor: Jie Meng
2006–2008 **Exchange PhD program**, Technical University of Munich, Germany.
Supervisor: Peter Ring
2000–2004 **BSc**, Nankai University, China.

Teaching and tutoring experience

- 2005 **Teaching Assistant**, Peking University, China.
2009–2011 **Modern physics for undergraduate students**, Southwest University, China.
Nuclear Theory for graduate students, Southwest University, China.
2010 **The first school of nuclear covariant density functional theory**, Beihang University, China.
2009–2016 **Supervisor of six master students**, Southwest University, China.

Prizes and awards

- 2015 **J. M. Yao (PI)**, *National Natural Science Foundation of China*, Multi-reference covariant energy density functional theory for odd-odd nuclei, Grant No. 11575148. \$80,000 for period 01/01/2016–12/30/2019
- 2013 **J. M. Yao (PI)**, *National Natural Science Foundation of China*, Covariant energy density functional theory for the hyperon impurity effect in atomic nuclei, Grant No. 111105111. \$30,000 for period 01/01/2012 –12/30/2014
- 2009 **J. M. Yao (PI)**, *National Natural Science Foundation of China*, Covariant energy density functional theory for the low-lying states of exotic nuclei, Grant No. 10947013. \$20,000 for period 01/01/2010–12/30/2012
- 2006-2008 **European Community project Asia-Europe Link in Nuclear Physics and Astrophysics**, CN/ASIA-LINK/008 (094-791).
- 2008 **Wu-Si scholarship for top students**, *Peking University*.
- 2001 **First prize in the mathematics competition for university students**, *Tianjin municipality*.

Professional service

- Reviewer for Journals **Physical Review C, Progress of Theoretical and Experimental Physics, Chinese Physics C, European Physical Journal A, International Journal of Modern Physics E, Communication in Theoretical Physics, Frontiers of Physics, Science in China.**
- Review Editor **Frontiers in Physics.**

References

Heiko Hergert, *hergert@frib.msu.edu*.
Jonathan Engel, *engelj@physics.unc.edu*.
Peter Ring, *peter.ring@tum.de*.
Kouichi Hagino, *hagino@nucl.phys.tohoku.ac.jp*.
Jie Meng, *mengj@pku.edu.cn*.

Publications

- Summary **60+ peer reviewed research papers.**
20+ conference proceedings.
3 book chapters.
H-index is 27 and total number of citations is 2082, *Web of Science*.
- Publons **<https://publons.com/researcher/1544854/jiangming-yao/>.**
- Inspirehep **http://inspirehep.net/search?ln=zh_CN&ln=zh_CN&p=find+au+j.+m.+yao&of=hcs&action_search=??&sf=&so=d&rm=&rg=25&sc=0.**
- ORCID **<http://orcid.org/0000-0001-9505-1852>.**

Invited talks in conferences/workshops

- 11/15/2019 **Ab initio calculation of deformed nuclei with in-medium generator coordinate method**, the 3rd Conference on "Microscopic Approaches to Nuclear Structure and Reactions" in honor of the late Daniel Gogny, Livermore, CA, USA.
- 8/2/2019 **Ab initio calculation of deformed nuclei and nuclear matrix elements for neutrinoless double beta decay**, INT Program INT-19-2a, Nuclear Structure at the Crossroads, July 1 - August 2, 2019, WA, USA.
- 06/26/2018 **Beyond relativistic mean-field approach to deformed hypernuclei (plenary talk)**, The 13th International Conference on Hypernuclear and Strange Particle Physics, Portsmouth Virginia, USA.
- 09/12/2014 **Nuclear matrix elements for neutrinoless double beta decay: multi-reference covariant DFT**, The Autumn meeting of Chinese Physical Society (CPS2014), Sep. 11-14, 2014, Harbin, China.
- 09/2014 **Multi-reference covariant density functional theory for nuclear spectroscopy: recent progress**, The long-term workshop "Present Status of the Nuclear Interaction Theory", Aug 25-Sep 19, 2014, Kavli Institute for Theoretical Physics China (KITPC), Chinese Academy of Sciences, Beijing.
- 10/2011 **Impurity effect of Lambda hyperon on the collective excitation of atomic nuclei**, The 18th Nuclear Physics Workshop "Nuclear Collective Phenomena ", September 28 - October 02, 2011, Kazimierz Dolny, Poland.
- 09/2011 **3D angular momentum restored calculations with a relativistic point-coupling Lagrangian**, International workshop on "Restoring broken symmetries within the nuclear Energy Density Functional method", September 13-15, 2011, CEA/SPhN, Gif-sur-Yvette Cedex, Paris, France.
- 09/2009 **An extended covariant density functional theory for low-lying states of exotic nuclei**, The 2009 Autumn meeting of Chinese Physical Society, September 17-20, 2009, Shanghai, China .

Contributed talks in conferences/workshops/seminars

- 3/6/2020 **Ab initio treatment of collective correlations in neutrinoless double beta decay**, Progress in Ab Initio Techniques in Nuclear Physics , TRIUMF, CA.
- 9/6/2019 **Ab initio Calculation of Nuclear Matrix Elements of Neutrinoless Double Beta Decay with the IMSRG+GCM approach**, DBD Collaboration meeting, UNC at Chapel Hill, USA.
- 8/15/2019 **Ab initio calculation of deformed nuclei and the nuclear matrix elements of neutrinoless double beta decay with multi-reference in-medium similarity renormalization group**, Nuclear Seminar at Peking University, Beijing, China.
- 5/23/2019 **Progress in IMSRG+GCM calculations for deformed nuclei**, The 2019 NUCLEI Collaboration meeting, Santa Fe, NM, USA.
- 11/19/2018 **Beyond mean-field approaches for nuclear physics**, Physics Colloquium, Western Michigan University, Kalamazoo, USA.

- 11/15/2018 **Computing low-lying states of deformed nuclei with chiral NN+3N interactions**, FRIB/NSCL, Michigan State University, East Lansing, USA.
- 09/07/2018 **GCM-based IMSRG and neutrinoless double beta decay**, 7-8 September, 2018 DBD Collaboration Meeting at Lawrence Berkeley National Laboratory, USA.
- 05/29/2018 **Multi-reference in-medium similarity renormalization group for deformed nuclei**, 2018 NUCLEI Collaboration Meeting, May 29 to June 1, 2018, Knoxville, Tennessee, USA.
- 04/03/2018 **Generator Coordinate Method for Nuclear Low-Lying States: from MR-EDF to MR-IMSRG Calculations**, Theory Seminar, NSCL/FRIB at MSU, East Lansing, USA.
- 06/20/2017 **Multi-Reference In-Medium SRG for Neutrinoless Double Beta Decay**, INT Program 17-2a, Neutrinoless Double-beta Decay, University of Washington, Seattle, USA.
- 06/08/2017 **Multi-reference in medium SRG for neutrinoless double beta decay**, NUCLEI Collaboration meeting, June 6-8, 2017 in Santa Fe, NM, USA.
- 02/03/2017 **Multi-Reference In-medium Similarity Renormalization Group for the Nuclear Matrix Elements of Neutrinoless Double Beta Decay**, 2017 DBD Collaboration Meeting, UMass Amherst, USA.
- 10/12/2016 **Multi-reference covariant density functional theory for the nuclear matrix elements of Neutrinoless Double Beta Decay**, Sichuan University, Chengdu, China.
- 08/01/2016 **Multi-reference In-medium SRG for the Nuclear Matrix Elements of Neutrinoless Double Beta Decay**, 2016 DBD Collaboration Meeting, August 1-2, 2016, FRIB, Michigan State University, East Lansing, USA..
- 06/06/2015 **Towards Ab-initio Calculation of Nuclear Matrix Elements for Neutrinoless Double Beta Decay**, NUCLEI SciDAC Collaboration Meeting, Argonne National Laboratory, USA.
- 05/18/2015 **Building New Nuclear Theory Research at York**, University of York, UK.
- 02/12/2015 **Beyond relativistic mean-field study of low-lying states for quadrupole-octupole deformed nuclei**, Collaboration workshop, Feb.12-13, 2015, Aizu University, Japan.
- 09/18/2014 **Unveiling nuclear structure with spectroscopic methods**, School of Physics and Nuclear Energy Engineering, Beihang University, Beijing, China.
- 03/17/2014 **A relativistic energy density functional calculation of the nuclear matrix elements in neutrinoless double beta decay**, International Molecule-type Workshop on New correlations in exotic nuclei and advances of theoretical models, Yukawa Institute for Theoretical Physics (YITP), Kyoto University, Japan, 2014.
- 12/04/2013 **Covariant density functional theory for nuclear collective excitations**, Yukawa Institute for Theoretical Physics (YITP), Kyoto University, Japan.
- 12/03/2013 **Beyond mean-field description of impurity effect of Lambda hyperon on nuclear collective excitations**, The Strangeness Nuclear Physics Laboratory, RIKEN Nishina center for Accelerator-Based Science, Japan.

- 10/09/2013 **Description of nuclear collective excitations with multi-reference covariant density functional theory: Role of dynamical correlation effects**, *The Theoretical Nuclear Physics Laboratory, RIKEN Nishina center for Accelerator-Based Science, Japan.*
- 09/10/2013 **Multi-Reference Covariant Density Functional Theory for Nuclear Spectroscopy**, *Sendai Nuclear Science Colloquium, Tohoku University, Japan.*
- 01/17/2012 **Beyond mean-field study of low-lying collective excitation states in lead region**, *Workshop on Coulex analysis in lead region, K.U. Leuven, Belgium.*
- 09/06/2011 **Effects of triaxiality in low-lying states of magnesium isotopes: a relativistic 3DAMP+GCM study**, *International Symposium: "Advances in Nuclear Many-Body Theory", Primosten, Croatia.*
- 24/09/2010 **Configuration mixing of angular momentum projected triaxial relativistic mean-field states**, *The 17th Nuclear Physics Workshop, "Marie & Pierre Curie", "Symmetry and symmetry breaking in nuclear physics", Kazimierz Dolny, Poland.*
- 29/06/2010 **Beyond the relativistic mean-field theory: configuration mixing of three-dimensional angular momentum projected states**, *The BLTP/JINR - KLFTP/CAS Joint Workshop on NUCLEAR PHYSICS, Dubna, Russia.*
- 01/06/2009 **Extending the covariant density functional theory for nuclear low-lying excited states – Three-dimensional angular momentum projected generator coordinate method**, *"Relativistic many-body problems for heavy and superheavy nuclei", KITPC/ITP-CAS, Beijing, China.*