

# Biographical information

**Morten Hjorth-Jensen**<sup>1,2</sup>

<sup>1</sup>Department of Physics and Center for Computing in Science Education, University of Oslo, Norway

<sup>2</sup>Department of Physics and Astronomy and Facility for Rare Isotope Beams, Michigan State University, USA

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## Professional preparation, education and personal data:

- Professor of Physics at Michigan State University, USA and the University of Oslo, Norway
- Norwegian citizen, born in Haugesund, Norway
- Norwegian University of Science and Technology, Trondheim, Norway, Siv.Ing. in Theoretical Physics (Master of Science equivalent), 1988
- University of Oslo, Norway, Ph.D in Theoretical Nuclear Physics, 1993
- ECT\*, Trento, Italy, Postdoctoral Researcher in Theoretical Nuclear Physics, 1994-1996
- Nordita, Copenhagen, Denmark, Postdoctoral Researcher in Theoretical Nuclear Physics, 1996-1998

## Appointments:

1. Associate Professor of Physics, University of Oslo, 1999-2001;
2. Professor of Physics, University of Oslo, 2001-present;
3. Adjunct Professor of Physics, Michigan State University, 2003-2011;
4. Professor of Physics, Michigan State University, 2012-present;

## Brief research overview

I am a theoretical physicist with a strong interest in computational physics, computational science and many-body theory in general, and the nuclear many-body problem and nuclear structure problems in particular. This means that I study various methods for solving either Schrödinger's equation or Dirac's equation for many interacting particles, spanning from algorithmic aspects to the mathematical properties of such methods, including machine learning and quantum computing.

## Editorial boards and committees.

- Board member of the European Center for Theoretical Studies in Nuclear Physics and Related Areas, Trento, Italy, 2017-2021
- Member of the Physics Advisory Committee at the National Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, USA, 2003-2008
- Member of the Canadian research council's evaluation board on subatomic physics 2012-2015.
- Member of the Swedish research council's evaluation board on subatomic physics 2007-2008.
- Editorial Board member of Physical Review C, 2014-2016
- Editorial Board member of European Physical Journal A, 2010-2016
- Editorial Board member of European Physical Journal Special Topics, 2010-present
- Editorial Board member of Springer's Lecture Notes in Physics, 2010-present
- Editorial Board member of Springer's Undergraduate Lecture Notes in Physics, 2014-present
- Editorial Board member of Springer's University Texts in Physics, 2015-present
- Editorial Board member of Springer's Undergraduate Texts in Physics, 2016-present
- Editorial Board member of Computers in Science and Discovery journal, a journal by IOP, UK, 2008-2014
- Steering Committee member of the FRIB theory alliance at Michigan State University 2013-2016

- Initiated and led the Nuclear Talent initiative from 2010 till 2015, member of the Steering committee till end of 2019.
- Member of the Board of Usit at UiO (Center for information technology at the University of Oslo), 2002-2004
- Project leader for High-performance computing courses at UiO, 2000-2003
- Board member of the Bachelor program Mathematics, Information theory and Technology at the University of Oslo, 2002-2008
- Leader of the Bachelor program Physics, Astronomy and Meteorology at the University of Oslo, 2002-2011
- Together with colleagues from the Department of Physics, Department of Mathematics and Department of Informatics at the University of Oslo, we started the Computers in Science Education project in 2004. This project, which we conceived back in 2003, has changed totally changed the way Science is taught.
- Member of the OECD working group on nuclear physics 2006-2008
- January 2009-December 2011, leader of the Nuclear Physics group at the University of Oslo
- Leader the new Master of Science program on Computational Science at the University of Oslo. This is a new and multi-disciplinary program across several disciplines at the College of Natural Science of the University of Oslo.

#### **Referee for International Journals.**

- Referee for Reviews of Modern Physics
- Referee for Physical Review Letters
- Referee for Nature
- Referee for Physical Review **C**
- Referee for Physical Review **D**
- Referee for Nuclear Physics **A**
- Referee for Physics Letters **B**
- Referee for Astrophysical Journal
- Referee for Journal of Chemical Physics
- Referee for Journal of Physics **A**: Mathematical Physics

- Referee for Journal of Physics **G**: Nuclear and Particle Physics
- Referee for European Journal of Physics **A**
- Referee for European Physics Letters
- Referee for Few Body Systems
- Referee for Modern Journal of Physics **E**
- Referee for Physica Scripta
- Referee for Annals of Physics
- Referee for SIAM
- Referee for Computer Physics Communications
- Referee for Computers in Science and Discovery
- Referee for Journal of Mathematics Physics
- Referee for Progress in Theoretical Physics
- Referee for Polish Journal of Physics

**Other Referee Activities.**

- Referee for the Canadian Research Council
- Referee for the Israeli Research Council
- Referee for the South African Research Council
- Referee for the British Research Council, SFTC
- Referee for the German Research Council
- Referee for the American Department of Energy (DOE)
- Referee for the American National Science Foundation (NSF)
- Referee for INFN, Istituto Nazionale di Fisica Nucleare, Italy
- Referee for ESF, European Science Foundation
- Referee for Vetenskapsrådet, the Swedish Research Council
- Referee for the Danish Research Council
- Referee for the Serbian Research Ministry
- Referee for the Russian Research Council

- Referee for the Research Council of Luxembourg
- Opponent at several PhD dissertations.
- Member of several PhD guidance committees at Michigan State University
- Several expert evaluations on promotion applications.
- Member or leader of several job assessment committees in Norway and the USA

**Member of International Advisory committees.**

1. 22nd International Few-Body Conference, member of IAC 2018 and 2024
2. International Nuclear Physics Conference, member of IAC since 2008
3. Nuclear Structure 2010 and 2014, member of IAC
4. Program Advisor Committee for Recent Progress in Many-Body Theories, member since 2007
5. Scientific advisory committee for Nuclear Theory in the Supercomputing Era
6. International Advisory committee of International Conference on Mathematical Modeling in Physical Sciences
7. International Advisory committee for XI Latin American Symposium on Nuclear Physics and Applications
8. International Advisory Board for Conference on Computational Physics
9. International Advisory committee for EURORIB15, EURORIB18, EURORIB24
10. International Advisory committee for SIAM conference on Computational Science and Engineering in Boston, 2013

**Awards:**

1. University of Oslo award for excellence in teaching, 2000 (250kNOK)
2. Fellow of the American Physical Society, 2007
3. Oak Ridge National Laboratory excellence in research award, 2008
4. Outstanding referee award of the American Physical Society, 2008
5. University of Oslo award for excellence in teaching for the **Computing in Science Education** project, 2011 (250kNOK)

6. NOKUT (Norwegian entity of quality assessment in higher education) [award for excellence in teaching](#) for the **Computing in Science Education** project, 2012
7. Elected member of the Norwegian Academy of Sciences and Letters, 2013
8. Elected member of the Royal Norwegian Society of Sciences and Letters, 2015
9. [University of Oslo award for excellence in teaching](#) for developing the Computational Physics group, 2015 (250kNOK)
10. Favorite graduate teacher at the Department of Physics and Astronomy at Michigan State University, 2016
11. **Olav Thon Foundation National prize for excellence in teaching award** (National, all Norwegian higher education institutions, 500kNOK), 2018
12. [Thomas H. Osgood Faculty Teaching award](#) at Michigan State University, 2018
13. University of Oslo merited teacher award 2020
14. College of Natural Science Norman L and Olga K. Fritz Excellence in Teaching Award, Michigan State University, 2021

### Citation metrics and some selected research highlights:

1. Google Scholar.
2. **Realistic effective interactions for nuclear systems**, M Hjorth-Jensen, TTS Kuo, E Osnes, [Physics Reports 261, 125-270 \(1995\)](#).
3. **Phases of dense matter in neutron stars**, H Heiselberg, M Hjorth-Jensen, [Physics Reports 328, 237-327 \(2000\)](#).
4. **Pairing in nuclear systems: from neutron stars to finite nuclei**, DJ Dean, M Hjorth-Jensen, [Reviews of Modern Physics 75, 607 \(2003\)](#).
5. T. Papenbrock, G. Hagen, M. Hjorth-Jensen, and D. J. Dean, *Coupled-cluster computations of atomic nuclei*, [Reports on Progress in Physics, 77:096302 \(2014\)](#).
6. Amber Boehnlein, Markus Diefenthaler, Cristiano Fanelli, Morten Hjorth-Jensen, Tanja Horn, Michelle P. Kuchera, Dean Lee, Witold Nazarewicz, Kostas Orginos, Peter Ostroumov, Long-Gang Pang, Alan Poon, Nobuo Sato, Malachi Schram, Alexander Scheinker, Michael S. Smith, Xin-Nian Wang, Veronique Ziegler, [Machine Learning in Nuclear Physics, Reviews of Modern Physics 94, 031003 \(2022\)](#)

## Research, Publications, books, refereed scientific articles, talks and research grants

### Books:

1. Morten Hjorth-Jensen, M.P. Lombardo and U. van Kolck, *Computational Nuclear Physics-Bridging the scales, from quarks to neutron stars*, Lectures Notes in Physics by Springer, Volume **936** (2017).

### Publications in journals with a referee system:

1. Bryce Fore, Jane Kim, Morten Hjorth-Jensen, Alessandro Lovato, **Investigating the crust of neutron stars with neural-network quantum states**, <https://arxiv.org/abs/2407.21207>
2. Patrick Cook, Danny Jammooa, Morten Hjorth-Jensen, Daniel D. Lee, Dean Lee, **Parametric Matrix Models**, Nature under review and <https://arxiv.org/abs/2401.11694>
3. Niyaz R. Beysengulov, Johannes Pollanen, Øyvind S. Schøyen, Stian D. Bilek, Jonas B. Flaten, Oskar Leinonen, Håkon Emil Kristiansen, Zachary J. Stewart, Jared D. Weidman, Angela K. Wilson, Morten Hjorth-Jensen, Coulomb interaction-driven entanglement of electrons on helium, PRX Quantum 5, 030324 (2024) and <https://journals.aps.org/prxquantum/abstract/10.1103/PRXQuantum.5.030324>
4. Julie Butler, Morten Hjorth-Jensen, and Justin G. Lietz, **Accelerating the Convergence of Coupled Cluster Calculations of the Homogeneous Electron Gas Using Bayesian Ridge Regression**, Journal of Chemical Physics under review and <https://arxiv.org/abs/2403.04645>
5. Jane Kim, Gabriel Pescia, Bryce Fore, Jannes Nys, Giuseppe Carleo, Stefano Gandolfi, Morten Hjorth-Jensen, Alessandro Lovato, **Neural-network quantum states for ultra-cold Fermi gases**, Nature Communications Physics **7**, 148 (2024) and <https://www.nature.com/articles/s42005-024-01613-w>
6. Bryce Fore, Jane M. Kim, Giuseppe Carleo, Morten Hjorth-Jensen, Alessandro Lovato, and Maria Piarulli, **Dilute neutron star matter from neural-network quantum states**, Physical Review Research **5**, 033062 (2023)
7. Mauro Rigo, Benjamin Hall, Morten Hjorth-Jensen, Alessandro Lovato, Francesco Pederiva, **Solving the nuclear pairing model with neural network quantum states**, Physical Review E **107**, 025310 (2023)
8. Even M. Nordhagen, Jane M. Kim, Bryce Fore, Alessandro Lovato, Morten Hjorth-Jensen, **Efficient Solutions of Fermionic Systems using Artificial Neural Networks**, Frontiers in Physics **11**, 1061580 (2023)

9. Kaspara Skovli Gåsvær, Pedro G. Lind, Johannes Langguth, Morten Hjorth-Jensen, Michael Kreil, Daniel Thilo Schroeder, **Harmful Conspiracies in Temporal Interaction Networks: Understanding the Dynamics of Digital Wildfires through Phase Transitions**, <https://arxiv.org/abs/2310.05542> and

COMPLEX NETWORKS 2023, The 12th International Conference on Complex Networks and their Applications, 28 - 30 November, 2023, Menton Riviera, France

1. D. Mroczek, M. Hjorth-Jensen, J. Noronha-Hostler, P. Parotto, C. Ratti, R. Vilalta, **Mapping out the thermodynamic stability of a QCD equation of state with a critical point using active learning**, *Physical Review C* **107**, 054911 (2023)
2. Oliver Lerstøl Hebnes, Marianne Etzelmüller Bathen, Øyvind Sigmundson Schøyen, Sebastian G. Winther Larsen, Lasse Vines, Morten Hjorth-Jensen, **Predicting Solid State Material Platforms for Quantum Technologies**, *npj Computational Materials* **8**, 207 (2022)
3. Amber Boehnlein, Markus Diefenthaler, Cristiano Fanelli, Morten Hjorth-Jensen, Tanja Horn, Michelle P. Kuchera, Dean Lee, Witold Nazarewicz, Kostas Orginos, Peter Ostroumov, Long-Gang Pang, Alan Poon, Nobuo Sato, Malachi Schram, Alexander Scheinker, Michael S. Smith, Xin-Nian Wang, Veronique Ziegler, **Machine Learning in Nuclear Physics**, *Reviews of Modern Physics* **94**, 031003 (2022)
4. D. Rhodes, B. A. Brown, J. Henderson, A. Gade, J. Ash, P. C. Bender, R. Elder, B. Elman, M. Grinder, M. Hjorth-Jensen, H. Iwasaki, B. Longfellow, T. Mijatovic, M. Spieker, D. Weisshaar, and C. Y. Wu, **Exploring the role of high-j configurations in collective observables through the Coulomb excitation of  $^{106}\text{Cd}$** , *Physical Review C* **103**, L051301 (2021)
5. Dean Lee, Scott Bogner, B. Alex Brown, Serdar Elhatisari, Evgeny Epelbaum, Heiko Hergert, Morten Hjorth-Jensen, Hermann Krebs, Ning Li, Bing-Nan Lu, Ulf-G. Meissner, Robert B. Wiringa, **Hidden spin-isospin exchange symmetry**, *Physical Review Letters* **127**, 062501 (2021)
6. Aynom T. Teweldebrhan, Thomas Schuler, John Burkhart, and Morten Hjorth-Jensen, *Coupled machine learning and the limits of acceptability approach applied in parameter identification for a distributed hydrological model*, *Hydrology and Earth System Sciences* **24**, (2020), 4641
7. Robert Solli, Daniel Bazin, Michelle P. Kuchera, Ryan R. Strauss, Morten Hjorth-Jensen, *Unsupervised Learning for Identifying Events in Active Target Experiments*, *Nuclear Instruments and Methods in Physics Research Section A* **1010**, 165461, (2020)



8. John M. Aiken, Riccardo De Bin, Morten Hjorth-Jensen, Marcos D. Caballero, Predicting time to graduation at a large enrollment American university, [PLoS ONE 15, e0242334 \(2020\)](#)
9. Calvin W. Johnson, Kristina D. Launey, Naftali Auerbach, Sonia Bacca, Bruce R. Barrett, Carl Brune, Mark A. Caprio, Pierre Descouvemont, W. H. Dickhoff, Charlotte Elster, Patrick J. Fasano, Kevin Fosse, Heiko Hergert, Morten Hjorth-Jensen, Linda Hlophe, Baishan Hu, Rodolfo M. Id Betan, Andrea Idini, Sebastian König, Konstantinos Kravvaris, Dean Lee, Jin Lei, Pieter Maris, Alexis Mercenne, Kosho Minomo, Rodrigo Navarro Perez, Witold Nazarewicz, F. M. Nunes, Marek Ploszajczak, Sofia Quaglioni, Jimmy Rotureau, Gautam Rupak, Andrey M. Shirokov, Ian Thompson, James P. Vary, Alexander Volya, Furong Xu, Remco G.T. Zegers, Vladimir Zelevinsky, Xilin Zhang, *From Bound States to the Continuum*, [Journal of Physics G Phys. 47, 123001 \(2020\)](#)
10. D. A. Torres, R. Chapman, V. Kumar, B. Hadinia, A. Hodsdon, M. Labiche, X. Liang, D. O'Donnell, J. Ollier, R. Orlandi, J. F. Smith, K. -M. Spohr, P. Wady, Z. M. Wang, L. Corradi, E. Fioretto, A. Gadea, G. de Angelis, N. Mărginean, D. R. Napoli, E. Sahin, A. M. Stefanini, J. J. Valiente-Dobón, F. D. Vedova, M. Axiotis, T. Martinez, S. Szilner, D. Bazzacco, S. Beghini, E. Farnea, R. Mărginean, D. Mengoni, G. Montagnoli, F. Recchia, F. Scarlassara, C. A. Ur, S. M. Lenzi, S. Lunardi, T. Kröll, F. Haas, T. Faul, M. Hjorth-Jensen, B. G. Carlsson, S. J. Freeman, A. G. Smith, G. Jones, N. Thompson, G. Pollaro, G. S. Simpson, *Study of medium-spin states of neutron-rich 87, 89, 91Rb isotopes*, [European Physical Journal A 55 \(2019\) p.158](#)
11. Marcos Daniel Caballero, Morten Hjorth-Jensen, Integrating a Computational Perspective in Physics Courses, [arXiv:1802.08871, Nova Publishers, New Trends in Physics Education Research \(2018\)](#)
12. Erich W. Ormand, Alex B. Brown and Morten Hjorth-Jensen, *First-principles calculations for c-coefficients of the isobaric mass multiplet equation in the 1p0f shell*, [Physical Review C Rapids, 96:024323 \(2017\)](#).
13. Morten Hjorth-Jensen, M.P. Lombardo and U. van Kolck, *Motivation and Overarching Aims, Lecture Notes in Physics*, Editors M. Hjorth-Jensen, M.P. Lombardo and U. van Kolck, Volume **936** pages 1-4 (2017).
14. Justin Lietz, Sam Novario, Gustav, Jansen, Gaute Hagen, and Morten Hjorth-Jensen, *High-performance computing and infinite nuclear matter, Lecture Notes in Physics*, Editors M. Hjorth-Jensen, M.P. Lombardo and U. van Kolck, Volume **936** pages 293-399 (2017).
15. Fei Yuan, Sam Novario, Nathan Parzuchowski, Sarah Reimann, Scott K. Bogner and Morten Hjorth-Jensen., *First principle calculations of quantum dot systems*, [Journal of Chemical Physics, 147:164109 \(2017\)](#).

16. Morten Hjorth-Jensen, *Scattering Experiments Tease Out the Strong Force*, *Physics*, 10:72 (2017).
17. Naofumi Tsunoda, Takaharu Otsuka, Noritaka Shimizu, Morten Hjorth-Jensen, Kazuo Takayanagi, Toshio Suzuki, *Exotic neutron-rich medium-mass nuclei with realistic nuclear forces*, *Physical Review C* Rapids, 95:021304(R) (2017).
18. G. Hagen, M. Hjorth-Jensen, G. R. Jansen, T. Papenbrock, *Emergent properties of nuclei from ab initio coupled-cluster calculations*, *Physica Scripta*, 91:063006 (2016).
19. G. Hagen, A. Ekstrom, C. Forssen , G. R. Jansen, W. Nazarewicz, T. Papenbrock, K. A. Wendt, S. Bacca, N. Barnea, B. Carlsson, C. Drischler, K. Hebeler, M. Hjorth-Jensen, M. Miorelli, G. Orlandini, A. Schwenk, and J. Simonis, *Charge, neutron, and weak size of the atomic nucleus*, *Nature Physics*, 12:186–190 (2016).
20. A. Ekstrom, G. R. Jansen, K. A. Wendt, G. Hagen, T. Papenbrock, B. D. Carlsson, C. Forssen, M. Hjorth-Jensen, P. Navratil, W. Nazarewicz, *Accurate nuclear radii and binding energies from a chiral interaction*, *Physical Review C*, 91, 051301(R) (2015).
21. A. Ekstrom, B. D. Carlsson, K. A. Wendt, C. Forssén, M. Hjorth-Jensen, R. Machleidt, S. M. Wild, *Statistical uncertainties of a chiral interaction at next-to-next-to leading order*, *Journal of Physics G*, 42:034003 (2015).
22. A. B. Balantekin, J. Carlson, D. J. Dean, G. M. Fuller, R. J. Furnstahl, M. Hjorth-Jensen, R. V. F. Janssens, Bao-An Li, W. Nazarewicz, F. M. Nunes, W. E. Ormand, S. Reddy, B. M. Sherrill , *Nuclear Theory and Science of the Facility for Rare Isotope Beams*, *Modern Physics Letters A*, 29:1430010 (2014).
23. Zs. Vajta, M. Stanoiu, D. Sohler, G. R. Jansen, F. Azaiez, Zs. Dombrádi, O. Sorlin, B. A. Brown, M. Belleguic, C. Borcea, C. Bourgeois, Z. Dlouhy, Z. Elekes, Zs. Fülöp, S. Grévy, D. Guillemaud-Mueller, G. Hagen, M. Hjorth-Jensen, F. Ibrahim, A. Kerek, A. Krasznahorkay, M. Lewitowicz, S. M. Lukyanov, S. Mandal, P. Mayet, J. Mrázek, F. Negoita, Yu.-E. Penionzhkevich, Zs. Podolyák, P. Roussel-Chomaz, M. G. Saint-Laurent, H. Savajols, G. Sletten, J. Timár, C. Timis, and A. Yamamoto, *\*Excited states in the neutron-rich nucleus  $^{25}\text{F}$* , *Physical Review C*, 89:054323 (2014).
24. A. Sanetullaev, M.B. Tsang, W.G. Lynch, Jenny Lee, D. Bazin, K.P. Chan, D. Coupland, V. Henzl, D. Henzlova, M. Kilburn, A.M. Rogers, Z.Y. Sun, M. Youngs, R.J. Charity, L.G. Sobotka, M. Famiano, S. Hudan, D. Shapira, W.A. Peters, C. Barbieri, M. Hjorth-Jensen, M. Horoi, T. Otsuka, T. Suzuki, Y. Utsuno *Neutron spectroscopic factors of  $^{55}\text{Ni}$  hole-states from  $(p,d)$  transfer reactions*, *Physics Letters B*, 736:137 (2014).

25. G. Hagen, T. Papenbrock, A. Ekstrom, G. Baardsen, S. Gandolfi, K. A. Wendt, M. Hjorth-Jensen, and C. Horowitz, *Coupled-cluster calculations of nucleonic matter*, *Physical Review C*, 89:014319 (2014).
26. T. Papenbrock, G. Hagen, M. Hjorth-Jensen, and D. J. Dean, *Coupled-cluster computations of atomic nuclei*, *Reports on Progress in Physics*, 77:096302 (2014).
27. N. Tsunoda, K. Takayanagi, M. Hjorth-Jensen and T. Otsuka, *Multi-shell effective interactions*, *Physical Review C*, 89:024313 (2014).
28. G. Baardsen, A. Ekstrom, G. Hagen, and M. Hjorth-Jensen, *Coupled-cluster studies of infinite nuclear matter*, *Physical Review C*, 88:054312 (2013).
29. V. M. Bader, A. Gade, D. Weisshaar, T. Baugher, D. Bazin, J. S. Berryman, B. A. Brown, A. Ekstrom, M. Hjorth-Jensen, S. R. Stroberg, W. B. Walters, K. Wimmer, and R. Winkler, *Quadrupole collectivity in neutron-deficient Sn nuclei:  $^{104}\text{Sn}$  and the role of proton excitations*, *Physical Review C*, 88:051301(R) (2013).
30. A. Ekstrom, G. Baardsen, C. Forss'en, G. Hagen, M. Hjorth-Jensen, G. R. Jansen, R. Machleidt, W. Nazarewicz, T. Papenbrock, J. Sarich, and S. M. Wild, *An optimal chiral interaction at next-to-next-to leading order*, *Physical Review Letters*, 110:192502 (2013).
31. Lepailleur, A. and Sorlin, O. and Caceres, L. and Bastin, B. and Borcea, C. and Borcea, R. and Brown, B. A. and Gaudefroy, L. and Gr'evy, S. and Grinyer, G. F. and Hagen, G. and Hjorth-Jensen, M. and Jansen, G. R. and Llidoo, O. and Negoita, F. and de Oliveira, F. and Porquet, M.-G. and Rotaru, F. and Saint-Laurent, M.-G. and Sohler, D. and Stanoiu, M. and Thomas, J. C., *Spectroscopy of  $^{26}\text{F}$  to Probe Proton-Neutron Forces Close to the Drip Line*, *Physical Review Letters*, 110:082502 (2013).
32. D. D. DiJulio, J. Cederkall, C. Fahlander, A. Ekstrom, M. Hjorth-Jensen, M. Albers, V. Bildstein, A. Blazhev, I. Darby, T. Davinson, H. De Witte, J. Diriken, Ch. Fransen, K. Geibel, R. Gernhäuser, A. Görgen, H. Hess, K. Heyde, J. Iwanicki, R. Lutter, P. Reiter, M. Scheck, M. Seidlitz, S. Siem, J. Taprogge, G. M. Tveten, J. Van de Walle, D. Voulot, N. Warr, F. Wenander, and K. Wimmer *Coulomb excitation of  $^{107}\text{In}$* , *Physical Review C*, 87:017301 (2013).
33. C. Forssen, G. Hagen, M. Hjorth-Jensen, W. Nazarewicz, and J. Rotureau, *Living on the edge of stability, the limits of the nuclear landscape*, *Physica Scripta*, T152:014022 (2013).
34. Liddick, S. N. and Abromeit, B. and Ayres, A. and Bey, A. and Bingham, C. R. and Brown, B. A. and Cartegni, L. and Crawford, H. L. and Darby, I. G. and Grzywacz, R. and Ilyushkin, S. and Hjorth-Jensen, M. and Larson,

- N. and Madurga, M. and Miller, D. and Padgett, S. and Paulauskas, S. V. and Rajabali, M. M. and Rykaczewski, K. and Suchyta, S., \* Low-energy level schemes of  $^{66,68}\text{Fe}$  and inferred proton and neutron excitations across  $Z = 28$  and  $N = 40^*$ , *Physical Review C*, 87:014325, 2013.
35. D. D. DiJulio, J. Cederkall, C. Fahlander, A. Ekstrom, M. Hjorth-Jensen, M. Albers, V. Bildstein, A. Blazhev, I. Darby, T. Davinson, H. De Witte, J. Diriken, Ch. Fransen, K. Geibel, R. Gernhauser, A. Gorgen, H. Hess, J. Iwanicki, R. Lutter, P. Reiter, M. Scheck, M. Seidlitz, S. Siem, J. Taprogge, G.M. Tveten, J. Van de Walle, D. Voulot, N. Warr, F. Wenander, and K. Wimmer, *Excitation strengths in  $^{109}\text{Sn}$ : Single-neutron and collective excitations near  $^{100}\text{Sn}$* , *Physical Review C*, 86:031302(R), 2012.
  36. D. D. DiJulio, J. Cederkall, C. Fahlander, A. Ekstrom, M. Hjorth-Jensen, M. Albers, V. Bildstein, A. Blazhev, I. Darby, T. Davinson, H. De Witte, J. Diriken, Ch. Fransen, K. Geibel, R. Gernhauser, A. Gorgen, H. Hess, J. Iwanicki, R. Lutter, P. Reiter, M. Scheck, M. Seidlitz, S. Siem, J. Taprogge, G.M. Tveten, J. Van de Walle, D. Voulot, N. Warr, F. Wenander, and K. Wimmer, *Coulomb excitation of  $^{107}\text{Sn}$* , *European Journal of Physics A*, 48:105, 2012.
  37. Gaute Hagen, Morten Hjorth-Jensen, Gustav Ragnar Jansen, Ruprecht Machleidt, and Thomas Papenbrock, *Evolution of shell structure in neutron-rich calcium isotopes*, *Physical Review Letters*, 109:032502, 2012.
  38. Gaute Hagen, Morten Hjorth-Jensen, Gustav Ragnar Jansen, Ruprecht Machleidt, and Thomas Papenbrock, *Continuum effects and three-nucleon forces in neutron-rich oxygen isotopes*, *Physical Review Letters*, 108:242501, 2012.
  39. Torres, D. A. and Kumbartzki, G. J. and Sharon, Y. Y. and Zamick, L. and Manning, B. and Benczer-Koller, N. and Speidel, K.-H. and Ahn, T. and Anagnostatou, V. and Elvers, M. and Goddard, P. and Heinz, A. and Ilie, G. and Radeck, D. and Savran, D. and Werner, V. and Gurdal, G. and Taylor, M. J. and Maier-Komor, P. and Hjorth-Jensen, M. and Robinson, S. J. Q. *Measurement of the  $^{96}\text{Ru}$   $g$ -factor and its nuclear structure interpretation*. *Physical Review C*, 85:017305, 2012.
  40. Torres, D. A. and Kumbartzki, G. J. and Sharon, Y. Y. and Zamick, L. and Manning, B. and Benczer-Koller, N. and Gurdal, G. and Speidel, K.-H. and Hjorth-Jensen, M. and Maier-Komor, P. and Robinson, S. J. Q. and Ahn, T. and Anagnostatou, V. and Elvers, M. and Goddard, P. and Heinz, A. and Ilie, G. and Radeck, D. and Savran, D. and Werner, V. *First  $g$ -factor measurements of the  $2^+$  and the  $4^+$  states of radioactive  $^{100}\text{Pd}$* . *Physical Review C*, 84:044327, 2011.
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Karol Kowalski, Wai Kin Lai, Kyle Leach, Ben Loer, Ian Low, Joshua Martin, David Moore, Thomas Mehen, Niklas Mueller, James Mulligan, Pieter Mumm, Francesco Pederiva, Rob Pisarski, Mateusz Ploskon, Sanjay Reddy, Gautam Rupak, Hersh Singh, Maninder Singh, Ionel Stetcu, Jesse Stryker, Paul Szypryt, Semeon Valgushev, Brent VanDevender, Samuel Watkins, Christopher Wilson, Xiaojun Yao, Andrei Afanasev, Akif Baha Balantekin, Alessandro Baroni, Raymond Bunker, Bipasha Chakraborty, Ivan Chernyshev, Vincenzo Cirigliano, Benjamin Clark, Shashi Kumar Dhiman, Weijie Du, Dipankar Dutta, Robert Edwards, Abraham Flores, Alfredo Galindo-Uribarri, Ronald Fernando Garcia Ruiz, Vesselin Gueorguiev, Fanqing Guo, Erin Hansen, Hector Hernandez, Koichi Hattori, Philipp Hauke, Morten Hjorth-Jensen, Keith Jankowski, Calvin Johnson, Denis Lacroix, Dean Lee, Huey-Wen Lin, Xiaohui Liu, Felipe J. Llanes-Estrada, John Looney, Misha Lukin, Alexis Mercenne, Jeff Miller, Emil Mottola, Berndt Mueller, Benjamin Nachman, John Negele, John Orrell, Amol Patwardhan, Daniel Phillips, Stephen Poole, Irene Qualters, Mike Rumore, Thomas Schaefer, Jeremy Scott, Rajeev Singh, James Vary, Juan-Jose Galvez-Viruet, Kyle Wendt, Hongxi Xing, Liang Yang, Glenn Young, Fanyi Zhao, Quantum Information Science and Technology for Nuclear Physics. Input into U.S. Long-Range Planning, 2023

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### Lectures and organization of schools:

1. The FRIB-TA Summer School: Practical Uncertainty Quantification and Emulator Development in Nuclear Physics at Facility for Rare Isotope Beams (FRIB) on the campus of Michigan State University (MSU) in East Lansing, MI USA, June 26-28 2023. Organizers and teachers, <https://indico.frib.msu.edu/event/65/overview>. Co-organizer and teacher with several other.
2. Alexei Bazavov, Scott Bogner, Heiko Hergert, Morten Hjorth-Jensen, Matthew Hirn, Dean Lee, Huey-Wen Lin, and Andrea Shindler, <https://indico.frib.msu.edu/event/54/>, FRIB TA Summer School - Quantum Computing and Nuclear few- and many-body problems, Facility for Rare Isotope Beams (FRIB) on the Michigan State University campus in East Lansing, MI from June 20 to June 22, 2022.
3. Morten Hjorth-Jensen, Nuclear Talent Course on Machine Learning in Nuclear Physics for the Erasmus+ program <http://www.emm-nucphys.eu/>, European Master in Nuclear Physics, University of Basse-Normandie and GANIL, September 15 2021-January 24, 2022. 30 lectures and 30 exercise sessions. Main teacher
4. Morten Hjorth-Jensen, Daniel Bazin, Sean Liddick, , Michelle Kuchera, and R. Ramanujan, Online Nuclear Talent course on Machine Learning Applied to Nuclear Physics, European Center for Theoretical Nuclear Physics and Related Areas, Trento, Italy, July 19 to July 30, 2021. Main organizer and teacher.
5. Morten Hjorth-Jensen, **2021 CHPC Introductory Programming Summer School**, South Africa, February 1-28, 2021, [five lectures on Machine Learning](#).
6. Morten Hjorth-Jensen, Nuclear Talent Course on Machine Learning in Nuclear Physics for the Erasmus+ program <http://www.emm-nucphys.eu/>, European Master in Nuclear Physics, University of Basse-Normandie and GANIL, January 18-29, 2021. 30 lectures and 30 exercise sessions. Main teacher
7. Morten Hjorth-Jensen, Daniel Bazin, Sean Liddick, , Michelle Kuchera, and R. Ramanujan, Online Nuclear Talent course on Machine Learning Applied to Nuclear Physics, European Center for Theoretical Nuclear Physics and Related Areas, Trento, Italy, June 22 to July 3, 2020. Main organizer and teacher.
8. Online lectures on **Machine Learning weeks at MSU-FRIB/NSCL**, May 2020. I lectured to undergraduate, graduate and post-docs at FRIB/MSU from May 18 till May 29 on Machine Learning applied to Nuclear Physics. Two lectures per day and one hour of hands-on sessions. On average between 25-30 participants per day. All material is available at <https://>

[github.com/mhjensen/MachineLearningMSU-FRIB2020](https://github.com/mhjensen/MachineLearningMSU-FRIB2020). In total I gave 20 one-hour lectures.

9. Morten Hjorth-Jensen, Nuclear Talent Course on Machine Learning in Nuclear Physics for the Erasmus+ program <http://www.emm-nucphys.eu/>, European Master in Nuclear Physics, University of Basse-Normandie and GANIL, January 20-31, 2020. 45 lectures and 45 exercise sessions. Main teacher
10. Morten Hjorth-Jensen, Matthew Hirn, Michelle Kuchera, and R. Ramanujan, <https://indico.frib.msu.edu/event/16/>, FRIB TA Summer School - Machine Learning Applied to Nuclear Physics, Facility for Rare Isotope Beams (FRIB) on the Michigan State University campus in East Lansing, MI from May 20 to 23, 2019. Main organizer and teacher.
11. **Hackathon on Computing in Science Education**, June 3-7, 2019, Michigan State University, East Lansing, USA. . Intensive workshop on Computing in Physics Education at Michigan State University. Organized together with Danny Caballero, MSU.
12. Morten Hjorth-Jensen, Nuclear Talent Course on Machine Learning in Nuclear Physics for the Erasmus+ program <http://www.emm-nucphys.eu/>, European Master in Nuclear Physics, University of Basse-Normandie and GANIL, January 21-February 1, 2019. 45 lectures and 45 exercise sessions. Main teacher
13. Nuclear Talent course on Many-body methods for nuclear physics, from Structure to Reactions at Henan Normal University, P.R. China, July 16-August 5 2018. Teachers: Kevin Fossez, Morten Hjorth-Jensen, Thomas Papenbrock, and Ragnar Stroberg.
14. Alex Brown, Alexandra Gade, Morten Hjorth-Jensen, Gustav Jansen, Robert Grzywacz, Nuclear Talent course on Nucleartheory for Nuclear Structure Experiments, July 3-21 2017. [Main organizer and teacher with in total fifteen hours of lectures.](#)
15. Hjorth-Jensen, Morten, [High performance computing in Nuclear Physics](#), Lecture at the *Advanced Computational Research Experience* at Michigan State University, East Lansing, Michigan, June 1, 2017.
16. Hjorth-Jensen, Morten, [How to write good code](#), Lecture at the *Advanced Computational Research Experience* at Michigan State University, East Lansing, Michigan, May 24, 2017.
17. Hjorth-Jensen, Morten, [Computational Nuclear Physics and Post Hartree-Fock Methods. Configuration Interaction Theory, Many-Body Perturbation Theory and Coupled Cluster Theory](#), five lectures at 28th Indian-Summer School on Ab Initio Methods in Nuclear Physics, Prague, Czech Republic, August 29 - September 2, 2016.



18. Hjorth-Jensen, Morten, [Computational Physics and Quantum Mechanical Systems](#), one week course on Computational Physics at the University of Tunis El Manar, Tunis, Tunisia, May 16-20, 2016. In total 15 hours of lectures and 15 hours of computer lab and exercises.
19. Co-organizer with Giuseppina Orlandini and Alejandro Kievsky of Nuclear Talent course [Few-body methods and nuclear reactions](#), ECT\*, Trento, Italy, July 20-August 7 2015
20. Carlo Barbieri, Wim Dickhoff, Gaute Hagen, Morten Hjorth-Jensen, and Artur Polls, Nuclear Talent course on Many-body methods for nuclear physics, GANIL, Caen, France, July 5-25 2015. [Main organizer and teacher with in total five hours of lectures.](#)
21. Hjorth-Jensen, Morten, ECT\* [Doctoral Training Program 2015 on Computational Nuclear Physics](#), April 13- May 22, ECT\*, Trento, Italy. I taught the last week of the lecture series. In total I have ten one hour lectures.
22. Hjorth-Jensen, Morten, Nuclear Talent School in Nuclear Astrophysics, co-organizer with Richard Cyburt and Hendrik Schatz of the Nuclear Talent course on Nuclear Astrophysics, Michigan State University, May 26 - June 13, 2014.
23. Hjorth-Jensen, Morten, Nuclear Talent course on Density Functional theories, co-organizer with Scott Bogner, Nicolas Schunck, Dario Vretenar and Peter Ring, European Center for Theoretical Nuclear Physics and Related Areas, Trento, Italy, July 13 -August 1 2014.
24. Hjorth-Jensen, Morten, Nuclear Talent Course Introduction on High-performance computing and computational tools for nuclear physics; ECT\*, Trento, Italy, June 24 - July 13 2012. Main organizer and teacher together with Francesco Pederiva, Kevin Schmidt and Calvin Johnson.
25. Hjorth-Jensen, Morten. Computational environment for Nuclear Structure, five lectures in Nuclear Physics at Universidad Complutense Madrid; 2011-01-17 - 2011-02-09
26. Hjorth-Jensen, Morten, organizer with David Dean, Thomas Papenprock and Gaute Hagen. Third MSU-UT/ORNL-UiO winter school in nuclear physics; Oak Ridge National Lab, Tennessee, January 2012
27. Hjorth-Jensen, Morten, organizer with Alex Brown and teaching five lectures. Second MSU-UT/ORNL-UiO winter school in nuclear physics, East Lansing, Michigan, USA; 2011-01-03 - 2011-01-07
28. Hjorth-Jensen, Morten, organizer, First MSU-UT/ORNL-UiO winter school in nuclear physics, Wadahl, Norway, January 4-10 2010

29. Hjorth-Jensen, Morten. Five lectures on Theory of shell-model studies for nuclei. CERN/Isolde course on nuclear structure theory; 2010-03-01 - 2010-03-04
30. Hjorth-Jensen, Morten. Six lectures on Nuclear interactions and the Shell Model. 8th CNS-EFES International Summer School, Riken, Tokyo, Japan, 2009-08-26 - 2009-09-01
31. Hjorth-Jensen, Morten. Five lectures on nuclear theory at the 20th Chris Engelbrecht Summer School in Theoretical Physics, Stellenbosch, South Africa, 2009-01-19 - 2009-01-28
32. Hjorth-Jensen, Morten. Nuclear many-body theory, five lectures at the UK Postgraduate Nuclear Physics Summer School, Leicester, UK, 2009-09-12 - 2009-09-23
33. Hjorth-Jensen, Morten. Nuclear many-body methods. Lectures series at Lund University; 2008-05-04 - 2008-05-07
34. Hjorth-Jensen, Morten. Trends in Nuclear Structure Theory. Workshop at the University of Lund; 2008-05-07 - 2008-05-07
35. Hjorth-Jensen, Morten. Trends in Nuclear Structure Theory. Physics Division Seminar; 2008-04-17 - 2008-04-17
36. Hjorth-Jensen, Morten. Trends in nuclear structure theory. Lecture series at the University of Padova and Legnaro National Laboratory, Padova Italy; 2008-07-16 - 2008-07-19
37. Hjorth-Jensen, Morten. Five lectures on Monte Carlo methods and applications in the physical sciences. eScience Winther School 2007; Geilo, Norway 2007-01-28 - 2007-02-02
38. Hjorth-Jensen, Morten. Five lectures at the ISOLDE Spring School in Nuclear Theory; CERN, Switzerland, 2007-05-21 - 2007-05-26
39. Hjorth-Jensen, Morten. Ten lectures at ECT\* Doctoral Training Programme 2007; Trento, Italy, April 16-20
40. Hjorth-Jensen, Morten. From the nucleon-nucleon interaction to a renormalized interaction for nuclear systems. Lecture series at Michigan State University; April 2005
41. Hjorth-Jensen, Morten. CENS: A computational Environment for Nuclear Structure. Isolde Lecture series; 2004-11-11 - 2005-11-25

**Talks, lectures and seminars at workshops, conferences, schools and institute colloquia.**

1. Hjorth-Jensen, Morten, [Quantum Computing and Quantum Mechanics for Many Interacting Particles](#), Gemini center at Sintef seminar, Oslo, March 3, 2021
2. Hjorth-Jensen, Morten, [Machine Learning and Quantum Mechanics for Many Interacting Particles](#), NITheP Colloquium, South Africa, Monday, 8 February 2021
3. Hjorth-Jensen, Morten, Machine Learning meets Nuclear Physics, XAI seminar series: Explaining what goes on inside DNN/AI, SINTEF/University of Oslo, Norway, December 8, 2020.
4. Hjorth-Jensen, Morten, Machine Learning meets Nuclear Physics, University of the Western Cape, South Africa, November 30- December 4, 2020, online workshop **Tastes of Nuclear Physics** <http://nuclear.uwc.ac.za/index.php/tnp2020/>
5. Hjorth-Jensen, Morten, Machine Learning meets Nuclear Physics, Institute colloquium at the Department of Physics, University of Padova, Italy, October 13, 2020.
6. Hjorth-Jensen, Morten, Machine Learning and Quantum Mechanics for Many Interacting Particles, UiO, March 3, 2020 <https://www.mn.uio.no/math/english/research/groups/statistics-data-science/events/seminars/hjorth-jensen.html>
7. Hjorth-Jensen, Morten, Lecture on Nuclear Physics at the NS3 school, FRIB, Michigan State University, May 15, 2019. Main organizer Artemis Spyrou, Michigan State University.
8. Morten Hjorth-Jensen, Solving Quantum Mechanical Many-body Problems with Machine Learning Algorithms, Chalmers Tekniska Högskola, Göteborg, Sverige, October 28, 2019.
9. Hjorth-Jensen, Morten, Integrating a Computational Perspective in Physics (and Science) Courses, October 23, 2019. Ole Rømer Colloquium, Department of Physics and Astronomy, University of Århus, Denmark <https://phys.au.dk/en/news/item/artikel/ole-roemer-colloquium-morten-hjort-jensen-tba/>
10. Morten Hjorth-Jensen, Solving Quantum Mechanical Many-body Problems with Machine Learning Algorithms, University of Surrey, Guildford, UK, October 1, 2019.
11. Hjorth-Jensen, Morten, Machine Learning and Quantum Mechanics for Many Interacting Particles, University of Ohio, Athens, April 16, 2019 <https://mhjensenseminars.github.io/MachineLearningTalk/doc/pub/unitn/html/uniohio-reveal.html>

12. Hjorth-Jensen, Morten, Machine Learning and Quantum Mechanics for Many Interacting Particles, University of Trento, Italy, March 12, 2019, 2019 <https://mhjensenseminars.github.io/MachineLearningTalk/doc/pub/unitn/html/unitn-reveal.html>
13. Hjorth-Jensen, Morten, "Integrating Computations in Physics Courses, Workshop on New Horizons in Teaching Science: 18th-19th, June 2018, University of Messina, Italy"
14. Hjorth-Jensen, Morten, Nuclear Structure studies from decay spectroscopy, Decay Station Workshop, NSCL/FRIB Michigan State University, January 25-26, 2018
15. Hjorth-Jensen, Morten, Computing in Science Education; how to integrate computing in Science courses across disciplines, seminar at the University of Surrey, UK, November 28 2017
16. Hjorth-Jensen, Morten, Computing in Physics Education, Invited talk at the 103rd National congress of the Italian Physical Society, Trento, September 11-15, 2017, Italy
17. Alex Brown, Alexandra Gade, Morten Hjorth-Jensen, Gustav Jansen, Robert Grzywacz, Nuclear Talent course on Nucleartheory for Nuclear Structure Experiments, July 3-21 2017. Main organizer and teacher with in total fifteen hours of lectures.
18. Hjorth-Jensen, Morten, High performance computing in Nuclear Physics, Lecture at the *Advanced Computational Research Experience* at Michigan State University, East Lansing, Michigan, June 1, 2017.
19. Hjorth-Jensen, Morten, How to write good code, Lecture at the *Advanced Computational Research Experience* at Michigan State University, East Lansing, Michigan, May 24, 2017.
20. Hjorth-Jensen, Morten, Minnetalen over Hans Petter Langtangen, Det Norske Vitenskapsakademiet, Oslo, Norway, March 16, 2017.
21. Hjorth-Jensen, Morten, Living on the edge of stability, challenges to nuclear theory in the FRIB era, Nuclear Physics seminar, University of Notre Dame, Notre Dame, IN 46556, USA, January 30, 2017
22. Hjorth-Jensen, Morten, Computational Nuclear Physics and Post Hartree-Fock Methods. Configuration Interaction Theory, Many-Body Perturbation Theory and Coupled Cluster Theory, five lectures at 28th Indian-Summer School on Ab Initio Methods in Nuclear Physics, Prague, Czech Republic, August 29 - September 2, 2016.
23. Hjorth-Jensen, Morten, Computational Physics and Quantum Mechanical Systems, one week course on Computational Physics at the University of Tunis El Manar, Tunis, Tunisia, May 16-20, 2016. In total 15 hours of lectures and 15 hours of computer lab and exercises.

24. Hjorth-Jensen, Morten, [Correlations in many-body systems; from condensed matter physics to nuclear physics](#), T-2, Nuclear and Particle Physics, Astrophysics and Cosmology, Los Alamos National Laboratory, New Mexico, USA, Tuesday, April 12, 2016
25. Hjorth-Jensen, Morten, [Integrating a Computational Perspective in the Basic Science Education](#), Department of Physics Colloquium at Central Michigan University, Kalamazoo, Michigan, USA, April 4, 2016
26. Co-organizer with Giuseppina Orlandini and Alejandro Kievsky of Nuclear Talent course [Few-body methods and nuclear reactions](#), ECT\*, Trento, Italy, July 20-August 7 2015
27. Carlo Barbieri, Wim Dickhoff, Gaute Hagen, Morten Hjorth-Jensen, and Artur Polls, Nuclear Talent course on Many-body methods for nuclear physics, GANIL, Caen, France, July 5-25 2015. [Main organizer and teacher with in total five hours of lectures](#).
28. Hjorth-Jensen, Morten, ECT\* [Doctoral Training Program 2015 on Computational Nuclear Physics](#), April 13- May 22, ECT\*, Trento, Italy. I taught the last week of the lecture series. In total I have ten one hour lectures.
29. Hjorth-Jensen, Morten, [Correlations in many-body systems, from condensed matter physics to nuclear physics](#), invited talk at Clarkfest 15, conference in honor of John W Clark, Wayman Crow Professor of Physics, Washington University in St. Louis, Missouri, April 27-28 2015.
30. Hjorth-Jensen, Morten, [Correlations in many-body systems, from condensed matter physics to nuclear physics](#), Nuclear Physics Seminar, Iowa State University, Ames, Iowa, April 22 2015.
31. Hjorth-Jensen, Morten, Nuclear physics education and the national FRIB theory center, plus some cool ways to organize your lectures, special seminar, Iowa State University, Ames, Iowa, April 23 2015.
32. Hjorth-Jensen, Morten, Integrating a Computational Perspective in the Basic Science Education, Special Lectures and Events, Notre Dame University, South Bend, Indiana, March 30 2015.
33. Hjorth-Jensen, Morten, Computing in Science Education. Integrating a Computational Perspective in the Basic Science Education, Physics Colloquium, Central Michigan University, Mt Pleasant, March 19 2015.
34. Hjorth-Jensen, Morten, From Nuclei to Neutron Stars: Why Is Matter Stable? Physics Colloquium, Ohio University, Athens, Ohio, February 27 2015.
35. Hjorth-Jensen, Morten, Computing in Science Education. Integrating a Computational Perspective in the Basic Science Education, condensed matter seminar, Ohio University, Athens, Ohio, February 26 2015.

36. Hjorth-Jensen, Morten, Theory challenges around  $^{78}\text{Ni}$  and  $^{132}\text{Sn}$ , invited talk at RIBSS Center retreat and CSAC, Michigan State University, June 11-13 2014.
37. Hjorth-Jensen, Morten, Living at the edge of stability, understanding the limits of the nuclear landscape, Institute colloquium, Department of Physics, Louisiana State University, Baton Rouge, Louisiana, April 3 2014.
38. Hjorth-Jensen, Morten, Computing in Science education, how to introduce a computational perspective in the basic science education, special colloquium Department of Physics, Louisiana State University, Baton Rouge, Louisiana, April 4 2014.
39. Hjorth-Jensen, Morten, Correlations in Nuclei and Quantum Dots, invited talk at The Fourth Conference on NUCLEI and MESOSCOPIC PHYSICS, Michigan State University, May 5-9 2014.
40. Hjorth-Jensen, Morten, Nuclear Talent School in Nuclear Astrophysics, co-organizer with Richard Cyburt and Hendrik Schatz of the Nuclear Talent course on Nuclear Astrophysics, Michigan State University, May 26 - June 13, 2014.
41. Hjorth-Jensen, Morten, Nuclear Talent course on Density Functional theories, co-organizer with Scott Bogner, Nicolas Schunck, Dario Vretenar and Peter Ring, European Center for Theoretical Nuclear Physics and Related Areas, Trento, Italy, July 13 -August 1 2014.
42. Hjorth-Jensen, Morten. Living at the edge of stability, understanding the limits of the nuclear landscape. Institute colloquium Centre Etudes Nucléaires de Bordeaux Gradignan; 2013-12-10 - 2013-12-10
43. Hjorth-Jensen, Morten. Educating the next generation of nuclear scientists; how can a center like the ECT\* aid in developing modern nuclear physics educational programs?. ECT\* 20th anniversary colloquium; 2013-09-14 - 2013-09-14
44. Hjorth-Jensen, Morten. Living at the edge of stability, understanding the limits of the nuclear landscape; computational and algorithmic challenges. XXV IUPAP Conference on Computational Physics, August 20, 2013-August 24, 2013, Moscow, Russia; 2013-08-20 - 2013-08-24
45. Hjorth-Jensen, Morten. Living at the edge of stability, understanding the nuclear landscape. Theory seminar National Superconducting Cyclotron Laboratory; 2013-03-19 - 2013-03-19
46. Hjorth-Jensen, Morten. Living on the edge of stability, the limits of nuclear landscape. Physics Division seminar, Argonne National Laboratory, Illinois, USA; 2013-06-05 - 2013-06-05

47. Hjorth-Jensen, Morten. Living on the edge of stability, the limits of the nuclear landscape. Institute colloquium; 2013-03-22 - 2013-03-22
48. Hjorth-Jensen, Morten. Living on the edge of stability, understanding the limits of the nuclear landscape. Nuclear Theory in the Supercomputing Era; 2013-05-13 - 2013-05-17
49. Hjorth-Jensen, Morten. Computing in Science Education. Seminar at college of engineering; 2012-03-15 - 2012-03-15
50. Hjorth-Jensen, Morten. Computing in Science Education, a new way to teach science?. Institute seminar The Ohio State University; 2012-02-28 - 2012-02-28
51. Hjorth-Jensen, Morten. Evolution of shell structure in neutron-rich isotopes. Research seminar National Superconducting Cyclotron Laboratory; 2012-03-15 - 2012-03-15
52. Hjorth-Jensen, Morten. Evolution of shell structure in neutron-rich isotopes and the stability of nuclear matter. Exotic Nuclear Structure from Nucleons; 2012-10-10 - 2012-10-12
53. Hjorth-Jensen, Morten. Introduction to computational nuclear physics. High-performance computing and computational tools for nuclear physics; 2012-06-24 - 2012-07-13
54. Hjorth-Jensen, Morten. Lecture 2: Configuration interaction theory. High-performance computing and computational tools for nuclear physics; 2012-06-24 - 2012-07-13
55. Hjorth-Jensen, Morten. Lectures 3-5: Configuration interaction theory and computational nuclear physics. High-performance computing and computational tools for nuclear physics; 2012-06-24 - 2012-07-13
56. Hjorth-Jensen, Morten. Shell Structure in Neutron-rich isotopes and the stability of nuclear matter. Berkeley Lab Colloquia 2012; 2012-05-30 - 2012-05-30
57. Hjorth-Jensen, Morten. Understanding the stability of nuclear matter. Nuclear structure seminar The Ohio State University; 2012-02-29 - 2012-02-29
58. Hjorth-Jensen, Morten. Understanding the stability of nuclear matter. Triangle Nuclear Theory Colloquium; 2012-05-01 - 2012-05-01
59. Hjorth-Jensen, Morten. Why is matter stable?. Theory of Nuclear Physics Related to the RI Facilities; 2012-05-11 - 2012-05-12
60. Hjorth-Jensen, Morten. Why is matter stable? Understanding the limits of stability of nuclear matter. Nobel Symposium 152; 2012-06-10 - 2012-06-15

61. Hjorth-Jensen, Morten. Computational environment for Nuclear Structure, Lectures I-V. Lecture series in Nuclear Physics at Universidad Complutense Madrid; 2011-01-17 - 2011-02-09
62. Hjorth-Jensen, Morten. Computers in Science Education; a new way to teach Science?. Institute seminar; 2011-03-21 - 2011-03-21
63. Hjorth-Jensen, Morten. Computers in Science Education; a new way to teach Science?. Seminar at Universidad Complutense Madrid; 2011-01-24 - 2011-01-24
64. Hjorth-Jensen, Morten. From few to many nucleons; a tale on recent advances (and challenges) in nuclear many-body theory. Institute seminar; 2011-03-25 - 2011-03-25
65. Hjorth-Jensen, Morten. Linking nuclear forces with many-body methods, Lecture II. Second MSU-UT/ORNL winter school in nuclear physics; 2011-01-03 - 2011-01-07
66. Hjorth-Jensen, Morten. Many-body interactions and nuclear structure. Institute seminar National Superconducting Cyclotron laboratory; 2011-01-05 - 2011-01-05
67. Hjorth-Jensen, Morten. Many-body interactions and nuclear structure. Seminar at Universidad Complutense Madrid; 2011-01-18 - 2011-01-18
68. Hjorth-Jensen, Morten. Many-body interactions and nuclear structure at the limits of stability. Institute seminar; 2011-03-22 - 2011-03-22
69. Hjorth-Jensen, Morten. Many-body interactions and nuclear structure at the limits of stability. Nordic Nuclear Physics conference 2011; 2011-06-13 - 2011-06-17
70. Hjorth-Jensen, Morten. Many-body interactions and nuclear structure at the limits of stability. Nuclear Physics in Astrophysics - V; 2011-04-03 - 2011-04-09
71. Hjorth-Jensen, Morten. Many-body methods, Lecture III. Second MSU-UT/ORNL winter school in nuclear physics; 2011-01-03 - 2011-01-07
72. Hjorth-Jensen, Morten. Many-body methods, Lectures IV and V. Second MSU-UT/ORNL winter school in nuclear physics; 2011-01-03 - 2011-01-07
73. Hjorth-Jensen, Morten. Nuclear structure at the limits of stability. Division of Nuclear Physics Meeting 2011; 2011-10-25 - 2011-10-29
74. Hjorth-Jensen, Morten. Parallel programming with MPI. The 10th Annual Meeting on High Performance Computing and Infrastructure in Norway; 2011-05-23 - 2011-05-27



75. Hjorth-Jensen, Morten. Renormalization of nuclear forces, Lecture set I. Second MSU–UT/ORNL winter school in nuclear physics; 2011-01-03 - 2011-01-07
76. Hjorth-Jensen, Morten. Computers in Science Education. Institute seminar at the university of Trento, Italy; 2010-05-05 - 2010-05-05
77. Hjorth-Jensen, Morten. Deriving nuclear forces. CERN/Isolde course on nuclear structure theory; 2010-03-01 - 2010-03-04
78. Hjorth-Jensen, Morten. From few to many nucleons; a tale on recent advances (and challenges) in nuclear many-body theory. Institute seminar; 2010-07-22 - 2010-07-22
79. Hjorth-Jensen, Morten. From few to many nucleons; a tale on recent advances (and challenges) in nuclear many-body theory. Spiral2 week 2010; 2010-01-25 - 2010-01-29
80. Hjorth-Jensen, Morten. High-performance computing and quantum mechanical problems. Future needs for eInfrastructure for Norwegian research, March 19 2010; 2010-03-19 - 2010-03-19
81. Hjorth-Jensen, Morten. Many-body interactions and nuclear structure. New faces of atomic nuclei; 2010-11-15 - 2010-11-17
82. Hjorth-Jensen, Morten. Many-body methods for nuclear structure studies. CERN/Isolde course on nuclear structure theory; 2010-03-01 - 2010-03-04
83. Hjorth-Jensen, Morten. Many-body theory for exotic nuclei and coupled-cluster theory. CERN/Isolde course on nuclear structure theory; 2010-03-01 - 2010-03-04
84. Hjorth-Jensen, Morten. Modern theory of effective interactions. Zakopane Conference On Nuclear Physics 2010; 2010-08-30 - 2010-09-05
85. Hjorth-Jensen, Morten. Overview of nuclear forces. CERN/Isolde course on nuclear structure theory; 2010-03-01 - 2010-03-04
86. Hjorth-Jensen, Morten. Renormalizing nuclear forces. CERN/Isolde course on nuclear structure theory; 2010-03-01 - 2010-03-04
87. Hjorth-Jensen, Morten. Role of many-body forces in nuclei. CERN/Isolde course on nuclear structure theory; 2010-03-01 - 2010-03-04
88. Hjorth-Jensen, Morten. Role of the tensor force in nuclear spectra. CERN/Isolde course on nuclear structure theory; 2010-03-01 - 2010-03-04
89. Hjorth-Jensen, Morten. Shell structure and modern effective interactions. International Nuclear Physics Conference 2010; 2010-07-04 - 2010-07-09

90. Hjorth-Jensen, Morten. Theory of shell-model studies for nuclei. CERN/Isolde course on nuclear structure theory; 2010-03-01 - 2010-03-04
91. Hjorth-Jensen, Morten. Ab initio methods in nuclear physics. Overview and recent achievements. Assemblée Générale des Théoriciens, 15 et 16 octobre, IPN-Orsay; 2009-10-15 - 2009-10-16
92. Hjorth-Jensen, Morten. Can we do ab initio calculations for nuclei beyond  $A=16$ ?. 7th Biennial Yale Nuclear structure workshop; 2009-06-18 - 2009-06-21
93. Hjorth-Jensen, Morten. Computers in Science Education. Institutt kollokvium; 2009-04-28 - 2009-04-28
94. Hjorth-Jensen, Morten. Datamaskiner i realfagsopplæringen, en ny måte å undervise realfag på?. Institutt kollokvium; 2009-02-13 - 2009-02-13
95. Hjorth-Jensen, Morten. From QCD to the nuclear many-body problem: theory and experiments at Isolde. New Opportunities in the Physics Landscape at CERN Search; 2009-05-10 - 2009-05-13
96. Hjorth-Jensen, Morten. Lecture 1: Models for the nuclear forces. 20th Chris Engelbrecht Summer School in Theoretical Physics; 2009-01-19 - 2009-01-28
97. Hjorth-Jensen, Morten. Lecture 1: Nuclear interactions. Postgraduate Nuclear Physics Summer School '09; 2009-09-12 - 2009-09-23
98. Hjorth-Jensen, Morten. Lecture 1: Nuclear interactions and the Shell Model. 8th CNS-EFES International Summer School; 2009-08-26 - 2009-09-01
99. Hjorth-Jensen, Morten. Lecture 2: Constructing effective interactions for the shell model. Postgraduate Nuclear Physics Summer School '09; 2009-09-12 - 2009-09-23
100. Hjorth-Jensen, Morten. Lecture 2: Nuclear interactions and the shell model. 8th CNS-EFES International Summer School; 2009-08-26 - 2009-09-01
101. Hjorth-Jensen, Morten. Lecture 2: Renormalization of nuclear forces. 20th Chris Engelbrecht Summer School in Theoretical Physics; 2009-01-19 - 2009-01-28
102. Hjorth-Jensen, Morten. Lecture 3: Effective interactions. 20th Chris Engelbrecht Summer School in Theoretical Physics; 2009-01-19 - 2009-01-28
103. Hjorth-Jensen, Morten. Lecture 3: Nuclear interactions and the shell model. 8th CNS-EFES International Summer School; 2009-08-26 - 2009-09-01

104. Hjorth-Jensen, Morten. Lecture 3: Shell model studies. Postgraduate Nuclear Physics Summer School '09; 2009-09-12 - 2009-09-23
105. Hjorth-Jensen, Morten. Lecture 4: Nuclear interactions and the shell model. 8th CNS-EFES International Summer School; 2009-08-26 - 2009-09-01
106. Hjorth-Jensen, Morten. Lecture 4: Nuclear many-body methods. 20th Chris Engelbrecht Summer School in Theoretical Physics; 2009-01-19 - 2009-01-28
107. Hjorth-Jensen, Morten. Lecture 5: Nuclear interactions and the shell model. 8th CNS-EFES International Summer School; 2009-08-26 - 2009-09-01
108. Hjorth-Jensen, Morten. Lecture 5: Nuclear many-body methods. 20th Chris Engelbrecht Summer School in Theoretical Physics; 2009-01-19 - 2009-01-28
109. Hjorth-Jensen, Morten. Lecture 6: Nuclear interactions and the shell model. 8th CNS-EFES International Summer School; 2009-08-26 - 2009-09-01
110. Hjorth-Jensen, Morten. Many-body methods and multiscale physics: A nuclear physics story. Seminar at CTCC, University of oslo; 2009-11-04 - 2009-11-04
111. Hjorth-Jensen, Morten. School on Nuclear Physics at the University of Oslo. 15 lectures in total. Nuclear Physics School; 2009-08-10 - 2009-08-14
112. Hjorth-Jensen, Morten. Shell structure around 100Sn. Gordon conference:Frontiers Of Nuclear Structure Through Spectroscopy And Reactions; 2009-06-21 - 2009-06-26
113. Hjorth-Jensen, Morten. Shell-model interactions around 100Sn. American Physical Society April meeting; 2009-05-01 - 2009-05-05
114. Hjorth-Jensen, Morten. Structure of very neutron-rich nuclei and some key questions in nuclear structure theory. HRIBF, Upgrade for the FRIB Era An HRIBF Users Workshop; 2009-11-13 - 2009-11-14
115. Hjorth-Jensen, Morten. Effective interactions and convergence criteria for configuration interaction methods. Effective Field Theories and the Many-Body Problem; 2009-03-23 - 2009-06-05
116. Hjorth-Jensen, Morten. CENS, a computational environment for nuclear structure. April Meeting of the American Physical Society; 2008-04-11 - 2008-04-15
117. Hjorth-Jensen, Morten. Cens lecture 1: Effective interactions for the nuclear shell model. Lecture series at the University of Padova and Legnaro National Laboratory, Padova Italy; 2008-07-15 - 2008-07-18

118. Hjorth-Jensen, Morten. Cens lecture 2: Nuclear structure studies. Lecture series at the University of Padova and Legnaro national Laboratory, Padova, Italy; 2008-07-15 - 2008-07-18
119. Hjorth-Jensen, Morten. Cens lecture 3, challenges for nuclear structure studies. Lecture series at the University of Padova and Legnaro national Laboratory, Padova, Italy; 2008-07-15 - 2008-07-18
120. Hjorth-Jensen, Morten. Computers in Science Education. Guest lecture at Michigan State University; 2008-03-30 - 2008-03-30
121. Hjorth-Jensen, Morten. Computers in Science Education. Forelesning ved UniK, Kjeller; 2008-10-23 - 2008-10-23
122. Hjorth-Jensen, Morten. Computers in Science education, a new way to teach science?. eNORIA: Workshop on eScience in Higher Education; 2008-10-07 - 2008-10-07
123. Hjorth-Jensen, Morten. From nuclear forces to the nuclear many-body problem. Carnegie 2008 Conference NUCLEAR STRUCTURE AT THE EXTREMES; 2008-05-08 - 2008-05-10
124. Hjorth-Jensen, Morten. From stable to weakly bound nuclei. Lectures series at Lund University; 2008-05-04 - 2008-05-07
125. Hjorth-Jensen, Morten. From the nucleon-nucleon interaction to effective interactions for the nuclear shell model. Lectures series at Lund University; 2008-05-04 - 2008-05-07
126. Hjorth-Jensen, Morten. Nuclear many-body methods, shell model and many-body perturbation theory. Lectures series at Lund University; 2008-05-04 - 2008-05-07
127. Hjorth-Jensen, Morten. Trends in Nuclear Structure Theory. Workshop at the University of Lund; 2008-05-07 - 2008-05-07
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133. Hjorth-Jensen, Morten. Challenges for nuclear many-body theories. CORRELATIONS IN NUCLEI: BEYOND-MEAN-FIELD AND SHELL-MODEL APPROACHES; 2007-06-04 - 2007-06-08
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139. Hjorth-Jensen, Morten. How to Integrate Parallel Computing in Science Education?. High-Performance and Parallel Computing; 2007-10-24 - 2007-10-24
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141. Hjorth-Jensen, Morten. Lecture 1: Models for the nuclear interactions. Lectures in Nuclear Physics, From basic nuclear interactions to nuclear structure; 2007-02-19 - 2007-02-19
142. Hjorth-Jensen, Morten. Lecture 1: Models for the nuclear interactions. ISOLDE Spring School in Nuclear Theory; 2007-05-21 - 2007-05-26
143. Hjorth-Jensen, Morten. Lecture 1: Models for the nuclear interactions. ECT\* Doctoral Training Programme 2007; 2007-04-16 - 2007-04-16
144. Hjorth-Jensen, Morten. Lecture 2: Renormalization of the nucleon-nucleon interaction. Lectures in Nuclear Physics, From basic nuclear interactions to nuclear structure; 2007-02-20 - 2007-02-20
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150. Hjorth-Jensen, Morten. Lecture 4: Effective interactions for various mass areas. Lectures in Nuclear Physics, From basic nuclear interactions to nuclear structure; 2007-02-22 - 2007-02-22
151. Hjorth-Jensen, Morten. Lecture 4: Effective interactions for various mass areas. ISOLDE Spring School in Nuclear Theory; 2007-05-21 - 2007-05-26
152. Hjorth-Jensen, Morten. Lecture 4: Effective interactions for various mass areas. ECT\* Doctoral Training Programme 2007; 2007-04-19 - 2007-04-19
153. Hjorth-Jensen, Morten. Lecture 5: From stable to weakly bound nuclei. Lectures in Nuclear Physics, From basic nuclear interactions to nuclear structure; 2007-02-23 - 2007-02-23
154. Hjorth-Jensen, Morten. Lecture 5: From stable to weakly bound nuclei. ECT\* Doctoral Training Programme 2007; 2007-04-20 - 2007-04-20
155. Hjorth-Jensen, Morten. Random numbers, Markov chains, Diffusion and the Metropolis algorithm. eScience Winther School 2007; 2007-01-28 - 2007-02-02
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168. Hjorth-Jensen, Morten. Basis, model space and wave functions for the shell model. Nuclear shell model applications; 2006-02-13 - 2006-02-17
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170. Hjorth-Jensen, Morten. Experimental and theoretical challenges for nuclei in the mass region  $A=56$  to  $A=78$ . Nuclear Physics seminar; 2006-09-01 - 2006-09-01
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185. Hjorth-Jensen, Morten. Computational Environment for Nuclear Structure: CENS. Lecture Series at Michigan State University; 2005-04-11 - 2005-04-12
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189. Hjorth-Jensen, Morten. Kvalitetsreformen, nye Muligheter for Samarbeid mellom Universitet og Næringsliv. Industridag, rom for muligheter; 2005-09-16 - 2005-09-16
190. Hjorth-Jensen, Morten. Large Scale Shell Model and Coupled Cluster Calculations. Microscopic Approaches to Many-Body Theories; 2005-08-30 - 2005-09-03
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198. Hjorth-Jensen, Morten. Coupled Cluster approaches to nuclei, ground state and excited states. 8th INTERNATIONAL SPRING SEMINAR ON NUCLEAR PHYSICS; 2004-05-23 - 2004-05-27
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202. Hjorth-Jensen, Morten. Mathematics for Neutron Stars. Foredrag ved CMA; 2004-05-11 - 2004-05-11
203. Hjorth-Jensen, Morten. Nuclear Many-Body Approaches and Experiment; workshop summary. Insitute of Nuclear Theory workshop series; 2004-10-04 - 2004-10-08
204. Hjorth-Jensen, Morten. Nuclear structure and the coupled-cluster method. International Nuclear Physics Conference, INPC2004; 2004-06-27 - 2004-07-02
205. Hjorth-Jensen, Morten. Nuclear Structure for Radioactive Ion Beam Physic. ISOLDE PHYSICS GROUP SEMINAR SERIES; 2004-09-21 - 2004-09-21
206. Hjorth-Jensen, Morten. Selected Nuclear Structure Topics. Workshop on Nuclear structure Studies for Light Nuclei; 2004-07-04 - 2004-07-08
207. Hjorth-Jensen, Morten. Shell-Model Approaches and Effective Interactions for Weakly Bound Systems. Insitute Seminar Max-Planck Institut fuer Kern Chemie; 2004-12-06 - 2004-12-06
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212. Hjorth-Jensen, Morten. Challenges for shell-model studies and emergent phenomena in nuclei. APS april meeting; 2003-04-04 - 2003-04-07
213. Hjorth-Jensen, Morten. Computational quantum mechanics. CMA seminar; 2003-05-06 - 2003-05-06

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215. Hjorth-Jensen, Morten. Effective interactions for weakly bound systems. Mini/workshop on nuclear many/body physics; 2003-04-02 - 2003-04-02
216. Hjorth-Jensen, Morten. Effective interactions from Greens functions. Recent advances in the nuclear shell model; 2003-06-29 - 2003-07-12
217. Hjorth-Jensen, Morten. Many-body methods and the nuclear shell-model. 10th Nordic Nuclear Physics Meeting; 2003-05-12 - 2003-05-16
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219. Hjorth-Jensen, Morten. Pairing correlations in nuclear systems. COMEX1; 2003-06-10 - 2003-06-13
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221. Hjorth-Jensen, Morten. Complex scaling and effective interactions for weakly bound nuclei. ; 2002
222. Hjorth-Jensen, Morten. Effective interactions and the nuclear shell model. Continuum aspects of the nuclear shell model; 2002-06-03
223. Hjorth-Jensen, Morten. Effective interactions for the nuclear shell model. Advanced computational methods for solving the nuclear many-body problem; 2002-03-12
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238. Hjorth-Jensen, Morten, Effective interactions for medium heavy nuclei. 5th international conference on radioactive nuclear beams; 2000-04-03
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244. Dean, David J.; Hjorth-Jensen, Morten; Liotta, Roberto; Zuker, A.P.. Advances in shell model studies in nuclei far from stability. Advances in shell model studies in nuclei far from stability; 1999-01-01
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251. Hjorth-Jensen, Morten. Realistic Effective Interactions and Large-Scale Nuclear Structure Calculation. Highlights of modern nuclear structure; 1998-05-01
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253. Engeland, Torgeir; Hjorth-Jensen, Morten; Holt, Anne; Osnes, Eivind. Extensive Shell-Model calculations in the tin isotopes. workshop on double-beta decay; 1996-01-01
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255. Hjorth-Jensen, Morten. Conference: International Conference on Realistic Nuclear Structure, to Celebrate the 60th Birthday of TTS (TOM) Kuo Location: SUNY Stony Brook, phys dept, STONY BROOK, NY, May 28-30, 1992
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## Courses, study programs and educational initiatives

I am strongly involved in teaching at all levels. I have been heading the bachelor program Physics, Astronomy and Meteorology ( FAM ) in the period 2002-2011. I am also strongly involved in the project Computing in Science Education. Furthermore, with European and American colleagues, we have established the recent successful Nuclear Talent initiative.

Since 1999 I have established an activity in computational physics at the Department of Physics at the University of Oslo. I have also started from scratch and developed several courses on computational physics, machine learning and many-body physics. This activity was recognized with the Excellence in Teaching award from the University of Oslo in 2015. During the last twenty years I have guided more than 100 graduate students (Master of Science and PhD levels) and post-doctoral fellows.

With colleagues at the University of Oslo, I have been strongly involved in the development of a totally new teaching philosophy which merges computation

with the traditional science and mathematics curriculum . This project is called [Computing in Science Education](#) and has received considerable support from the University of Oslo and the Norwegian Ministry of research and education. It received the University of Oslo award for excellence in teaching in 2011 and the NOKUT award in 2012.

With colleagues from the USA and other European countries, we started in 2010 the Nuclear Talent initiative: "<http://www.nucleartalent.org>", where we aim at providing an advanced and comprehensive training to graduate students and young researchers in low-energy nuclear theory. The network aims at developing a broad curriculum that will provide the platform for a cutting-edge theory for understanding nuclei and nuclear reactions. Over the years I have taught and organized several such intensive courses (see list below).

I initiated in 2015 and chair the new [Master of Science program on Computational Science at the University of Oslo](#). This is a new and multi-disciplinary program across several disciplines at the College of Natural Science of the University of Oslo.

I teach or have taught recently the following courses at the University of Oslo and Michigan State University:

- [FYS3150/4150 Computational Physics I](#), Fall semester, senior undergraduate level (Oslo)
- [FYS4411 Computational Physics II: Quantum mechanical systems](#), graduate level, Spring semester (Oslo)
- [FYS4480 Quantum mechanics for many-particle systems](#), graduate level, Fall semester (Oslo)
- [PHY981 Nuclear Structure](#), graduate level, Spring semester (MSU)
- [PHY480/905 Computational Physics](#) (MSU), undergraduate and graduate level, Spring semester
- [FYS5419 Quantum Computing](#)
- [FYS5429 Advanced Machine Learning for the Physical Sciences](#)

From the fall of 2018 I have developed and teach the new course on **Applied Data analysis and Machine Learning** at the University of Oslo. This course is a compulsory course that is part of the new interdisciplinary Master of Science program [Computational Science](#). The link to the course is

- [FYS-MAT3155/4155 Data Analysis and Machine Learning](#), senior undergraduate and graduate level, Fall semester (Oslo)
- [PHY321 Classical Mechanics](#), MSU, undergraduate course, spring semester. First time spring 2020.

I have also taught introductory quantum physics, FYS2140, 2000-2004, Statistical Mechanics, FYS4130, 1990-1994 and I have developed an advanced course on [FYS-KJM4480 Quantum mechanics for many-particle systems](#), 2009-2014, all at the at the University of Oslo, Norway. At Michigan State Univeristy I have also taught an advanced course in Nuclear Structure Physics PHYS981 Nuclear Structure, graduate level, Spring semester, 2013-2016. In addition, with Scott Bogner at Michigan State University, we taught a specialized course on Nuclear Force, PHY989, during the fall semester of 2018.

### **Present PhD students.**

1. [Øyvind Sigmundsson Schøyen](#), University of Oslo, started fall 2019. Thesis defense spring/summer 2024. Research topic: Time-dependent many-body theory and quantum computing
2. [Stian Bilek](#), University of Oslo, started fall 2020. Quantum Computing and Machine Learning
3. [Jonas Boym Flaten](#), University of Oslo, started fall 2020. Quantum Many-Body theories and quantum computing
4. [Oskar Leinonen](#), University of Oslo, started fall 2022. Quantum computing
5. [Danny Jammoo](#), Michigan State University, started 2020, co-supervisor. Research topic: Quantum Computing and Machine Learning.
6. [Patrick Cook](#), Michigan State University, started 2020, co-supervisor. Research topic: Quantum Computing and Machine Learning.
7. [Aymeric McRae](#), Michigan State University, started 2020, co-supervisor. Research topic: Quantum Computing and Machine Learning.
8. [Nicholas Cariello](#), Michigan State University, started 2020, co-supervisor. Research topic: Quantum Computing and Machine Learning.
9. [Paulina Souza Tedesco](#), University of Oslo, started 2020, defends thesis fall 2024, Machine Learning and Meteorology, co-supervisor
10. [Katarzyna Michałowska](#), University of Oslo, started 2021, defends thesis fall 2024, Machine Learning, co-supervisor
11. Einar Aurbakken, University of Oslo, started 2020, defends thesis fall 2024, Quantum Chemistry and Many-body Physics, co-supervisor
12. [Andreas H. Mjøs](#), started fall 2021. Thesis topic: Bayesian statistics applied to nuclear physics experiments, co-supervisor
13. [Erlend Lima](#), started fall 2021. Thesis topic: Bayesian statistics applied to nuclear physics experiments, co-supervisor

14. [Christina Kappatou](#), started fall 2022. Thesis topic: Geoscience and Machine Learning, co-supervisor
15. [Alf Johan Skarpeid](#), started fall 2023, Thesis topic: Experimental condensed matter physics, co-supervisor
16. [Ruben Pariente Bassa](#), started fall 2023, co-supervisor. Research topic: Quantum Computing.
17. [Sunniva Meltzer](#), started fall 2023, co-supervisor. Research topic: Machine learning.

**Former PhD students and their present positions.**

1. [Jane Kim](#), Michigan State University, started fall 2018. Defended thesis July 20, 2023. Research topic: Machine Learning and the Nuclear Many-body problem. Now post-doctoral research fellow at University of Ohio, Athens, USA
2. [Julie Butler](#), Michigan State University, started fall 2018. Defended thesis July 18, 2023. Research topic: Machine Learning and the Nuclear Many-body problem. Now assistant professor at Mt Union university, Ackron, Ohio
3. [Benjamin Hall](#), Michigan State University, started 2017. Defended thesis August 25, 2022. Research topic: Quantum Computing and the Nuclear Many-body problem. Present job: scientist and researcher at [Super.Tech](#)
4. John Mark Aiken, University of Oslo, started 2017, defended thesis September 2020, co-supervisor. Research Topic: Machine Learning applied to Physics Education Research. Now post-doctoral fellow at the University of Oslo and scientist at Expert Analytics
5. [Justin Lietz](#) (PhD MSU, June 2019), permanent position as scientist at Oak Ridge National Laboratory, Computational Science Division, 2019-2023. Now researcher at NVidia.
6. [Samuel Novario](#) (PhD MSU, February 2018), post-doctoral fellow at Oak Ridge National Laboratory, Physics Division, 2018-2020, post-doctoral fellow at Los Alamos National Laboratory 2020-2023 and now staff scientist at University of Washington. St. Louis since fall 2023.
7. [Fei Yuan](#) (PhD MSU, January 2018), Software engineer at Google
8. [Gustav Baardsen](#) (PhD UiO 2014). From 2015 to 2018, post-doctoral researcher at the Center for Theoretical and Computational Chemistry (CTCC), University of Oslo. Now employed by Varian Medical Systems, Helsinki, Finland.



9. [Simen Kvaal](#) (PhD UiO 2009), researcher, Department of Chemistry, University of Oslo. Recipient of an ERC starting grant
10. [Gustav Jansen](#) (PhD UiO 2012), now permanent position as scientist at the Computational Science Division of Oak Ridge National Laboratory
11. [Torquil MacDonald Sørensen](#) (PhD UiO 2012), post-doctoral fellow at the Department of Mathematics, UiO
12. [Jon Kerr Nilsen](#) (PhD UiO 2010), senior engineer at the University of Oslo center for information technologies (co-supervisor)
13. [Marius Lysebo](#) (PhD UiO 2010), Professor at Oslo University College, (co-supervisor)
14. [Elise Bergli](#) (PhD UiO 2010), teacher Ås high school, Norway and Assistant Professor at the Norwegian University of Life Sciences.
15. [Eirik Ovrum](#) (PhD UiO 2007), now Associate Professor at the University College of Southeast of Norway
16. [Gaute Hagen](#) (PhD UiB and UiO 2005), now permanent position as scientist at the Physics Division of Oak Ridge National Laboratory. Recipient of the Department of Energy Early career award

**Post-doctoral fellows and their present positions.**

1. [Andreas Ekstrøm](#) (UiO and MSU 2010-2014), Professor at Chalmers Technological University in Gothenburg, Sweden
2. [Øyvind Jensen](#) (UiO 2011), researcher at the [Institute for Energy Technology](#)
3. [Simen Kvaal](#) (UiO 2008-2012), Associate Professor, Department of Chemistry, University of Oslo. Recipient of an ERC starting grant
4. [Elise Bergli](#) (UiO 2010-2011), now teacher at Ås high school, Norway
5. [Solve Selstø](#) (UiO 2008-2010), now Professor at Oslo Metropolitan University
6. [Nicolas Michel](#) (MSU 2013), Professor at Institute of modern physics Lanzhou, China

**Member of Graduate Advisory Committees at Michigan State University.** I am (have been) member or chair person of the following graduate student committees at Michigan State University:

1. Justin Lietz, chair, defended thesis June 2019.
2. Fei Yuan, chair. Defended thesis January 2018.
3. Sam Novario, chair. Defended thesis February 2018.
4. John Bower, chair together with Scott Bogner. Master of Science thesis May 2017.
5. Adam Jones, committee member. Master of Science thesis July 2017.
6. Chris Sullivan, committee member. Defended thesis January 2018.
7. Thomas Redpath, committee member. Defended thesis October 2019.
8. Sean Sweany, committee member, defends thesis fall 2020.
9. Rachel Taverner, committee member. Defended thesis May 2019.
10. Nathan Parzuchowski, committee member. Defended thesis April 2017.
11. Titus Morris, committee member. Defended thesis May 2016
12. Kenneth Whitmore, committee member. Defended thesis June 2016
13. Alex Dombos, committee member. Defended thesis May 2018.
14. Josh Bradt, committee member, Defended thesis July 2017.
15. Charles Loelius, committee member, Defended thesis May 2017.
16. Safwan Shanab, committee member. Defended thesis January 2020.
17. Hao Lin, committee member. Defended thesis July 2020.
18. Mao Xingze, committee member. Defended thesis July 2020.
19. Amy Lovell, committee member. Defended thesis January 24 2018.
20. Debra Richman, committee member, defends thesis December 2020.
21. Roy Ready, committee member. Defended thesis May 2021.
22. Nathan Watwood, committee member. Defended thesis February 2021.
23. Ben Hall, chair, thesis defense August 2022
24. Udiani Omokuyani, committee member
25. Julie Butler, chair, defended thesis July 2023

26. Jane Kim, chair, defended thesis July 2023
27. Khan Zhu, committee member.
28. Byeon Heejun, committee member. Defended thesis December 2020.
29. Golubev Timofey, committee member. Defended thesis December 2020.
30. Hermansen, Kirby, committee member
31. Watkins Jacob, , committee member
32. Hill Matthew Steven, committee member
33. Larose, Ryan, committee member, defended thesis May 2022

**Present Master of Science Students.**

1. Daniel Haass Beccatini Lima (2022-2024)
2. Håkon Kvernmoen (2022-2024)
3. Keran Chen (2022-2024)
4. Simen Løken (2022-2024)
5. Henrik Modahl Breitenstein (2022-2024)
6. Odin Johansen (2023-2025)
7. Jonny Igeh Aarstad (2023-2025)
8. Yevgehnii Volkov (2023-2025)
9. Ida Madsen (2023-2025), co-supervisor
10. Luis Roberto Jiminez Arteta (2023-2025), co-supervisor
11. Joseph Ivan Panana Vera (2023-2025), co-supervisor

**Former Master of Science Students.**

1. Linus Ekstrøm (UiO 2020-2022)
2. Philip Karim Niane Sørli (UiO 2020-2022)
3. Karl Henrik Fredly (UiO 2020-2022)
4. Adrian Kleven (UiO 2020-2022), co-supervisor
5. Kaspara Gåsvær (UiO 2020-2022), co-supervisor
6. Maria Horgen (UiO 2020-2022), co-supervisor

7. Jens Due Bratten, University of Oslo, (2019-2021)
8. Kristian Wold, University of Oslo, (2019-2021)
9. Martin Krokan Hovden, University of Oslo, (2019-2021)
10. Johan Nereng, University of Oslo, (2019-2021)
11. Oliver Hebnes, University of Oslo, (2019-2021), co-supervisor
12. Heine Aabø, University of Oslo, (2018-2020)
13. Stian Bilek, University of Oslo, (2018-2020)
14. Thomas Sjøstad, University of Oslo, (2018-2020), co-supervisor
15. Halvard Sutterud, University of Oslo, (2018-2020), co-supervisor
16. Marius Holm, University of Oslo, (2018-2020), co-supervisor
17. Geir Utvik, University of Oslo, (2018-2020)
18. Vebjørn Gilberg, University of Oslo, (2017-2020), co-supervisor
19. Kari Eriksen, University of Oslo, (2017-2020)
20. Robert Solli, University of Oslo, (2017-2019)
21. Andreas Lefdalsnes, University of Oslo, (2017-2019)
22. Joseph Knutson, University of Oslo, (2017-2019)
23. Bendik Samseth, University of Oslo, (2017-2019)
24. Even Nordhagen, University of Oslo, (2017-2019)
25. Øyvind Schøyen Sigmundson, University of Oslo, (2017-2019)
26. Sebastian Gregorius Winther-Larsen, University of Oslo, (2017-2019)
27. Giovanni Pederiva, University of Oslo, (2016-2018), co-supervisor
28. Anna Gribovskaya, University of Oslo, (2016-2018)
29. Andrei Kucharenka, University of Oslo, (2016-2018)
30. Vilde Moe Flugsrud, University of Oslo, (2016-2018)
31. Alfred Alocias Mariadason, University of Oslo, (2016-2018)
32. Marius Jonsson, University of Oslo, (2016-2018)
33. Hans Mathias Vege Mamen, University of Oslo, (2016-2019), co-supervisor
34. Alexander Fleischer, University of Oslo, (2015-2017)

35. Håkon Emil Kristiansen, University of Oslo, (2015-2017)
36. Morten Ledum, University of Oslo, (2015-2017)
37. Håkon Treider Vikør, University of Oslo, (2015-2017), co-supervisor
38. Jon-Andreas Stende, University of Oslo, (2015-2017), co-supervisor
39. Sean Bruce Sangholt Miller, University of Oslo, (2015-2017)
40. Christian Fleischer, University of Oslo, (2015-2017)
41. John Bower, Michigan State University, (2014-2017)
42. Wilhelm Holmen, University of Oslo (2014-2016)
43. Roger Kjøde, University of Oslo, (2014-2016)
44. Håkon Sebastian Mørk, University of Oslo, (2014-2016)
45. Jonas van den Brink, University of Oslo, (2014-2016), co-supervisor
46. Marte Julie Sætra, University of Oslo, (2014-2016), co-supervisor
47. Audun Skau Hansen, University of Oslo, (2013-2015)
48. Henrik Eiding, University of Oslo, (2012-2014)
49. Sverre-Arne Dragly, University of Oslo, (2012-2014)
50. Milad Hobbi Mobarhan, University of Oslo, (2012-2014)
51. Ole Tobias Norli, University of Oslo, (2012-2014)
52. Filip Sand, University of Oslo, (2012-2014), co-supervisor
53. Emilie Fjørner, University of Oslo, (2012-2014), co-supervisor
54. Jørgen Høgberget, University of Oslo, (2011-2013)
55. Sarah Reimann, University of Oslo, (2011-2013)
56. Karl Leikganger, University of Oslo, (2011-2013)
57. Sigve Bøe Skattum, University of Oslo, (2011-2013)
58. Veronica Berglyd Hansen, University of Oslo, (2010-2012)
59. Camilla Nestande Kirkemo, University of Oslo, (2010-2012), co-supervisor
60. Christoffer Hirth, University of Oslo, (2009-2011)
61. Marte Hoel Jørgensen, University of Oslo, (2009-2011)
62. Yang Min Wang, University of Oslo, (2009-2011)

63. Ivar Nikolaisen, University of Oslo, (2009-2011)
64. Vegard Amundsen, University of Oslo, (2008-2010)
65. Håvard Sandsdalen, University of Oslo, (2008-2010)
66. Lars Eivind Lervåg, University of Oslo, (2008-2010)
67. Magnus Lohne Pedersen, University of Oslo, (2008-2010)
68. Simen Sørby, University of Oslo, (2008-2010), co-supervisor
69. Sigurd Wenner, University of Oslo, (2008-2010), co-supervisor
70. Lene Norderhaug Drøsdal, University of Oslo, (2007-2009)
71. [Islen Vallejo](#), [University of Oslo](#), (2007-2009), works at the Norwegian Institute for Air Research
72. Jacob Kryvi, Norwegian University of Science and Technology, (2007-2009), co-supervisor
73. Rune Albrigtsen, University of Oslo, (2007-2009)
74. Johannes Rekkedal, University of Oslo, (2007-2009)
75. Patrick Merlot, University of Oslo, (2007-2009)
76. Gustav Jansen, University of Oslo, (2006-2008)
77. Ole Petter Harbitz, University of Oslo, (2006-2008)
78. Sutharsan Amurgian, University of Oslo, (2005-2007)
79. Jon Thonstad, University of Oslo, (2005-2007)
80. Espen Flage-Larsen, University of Oslo, (2003-2005)
81. Joachim Berdahl Haga, University of Oslo, (2004-2006)
82. Jon Kerr Nilsen, University of Oslo, (2002-2004)
83. Simen Kvaal, University of Oslo, (2002-2004)
84. Simen Reine Sommerfelt, University of Oslo, (2002-2004)
85. Mateuz Marek Røstad, University of Oslo, (2002-2004)
86. Victoria Popsueva, University of Oslo, (2002-2004)
87. Eivind Brodal, University of Oslo, (2001-2003)
88. Eirik Ovrum, University of Oslo, (2001-2003)
89. Ronny Kjelsberg, Norwegian University of Science and Technology, (2001-2003)

## Selected research grants as PI and co-PI, financed and pending applications

1. 2022-2025 400 kUSD from the Department of Energy, Effective Field Theory and Renormalization Group Studies of Quantum Algorithms, Co-PI with Dean Lee and others, Michigan State university
2. 2023-2025 STREAMLINE Collaboration: Machine Learning for Nuclear Many-Body Systems, 2 MUSD from the Department of Energy, co-PI with Dean Lee and otherd, Michigan State University
3. 2023-2026 600 kUSD from the National Science Foundation for the project Many-Body Theories and Methods for Nuclear Physics, CO-PI with Scott Bogner. Michigan State University.
4. 2020-2022 750 kUSD from the Department of Energy, From Quarks to Stars; A Quantum Computing Approach to the Nuclear Many-Body Problem. PI, grant number DoE-0000248785
5. 2020-2023 600 kUSD from the National Science Foundation for the project From nuclei to neutron stars, CO-PI with Scott Bogner, Grant number PHY-013877.
6. 2016-present Co-PI at the Norwegian center of excellence in Education *Center for Computing in Science Education*, University of Oslo wit annual funding from NOKUT of 5MNOK
7. 2017-2020 600 kUSD from the National Science Foundation for the project From nuclei to neutron stars, CO-PI with Scott Bogner. Grant number PHY-1713901
8. 2014-2017 600 kUSD from the National Science Foundation for the project Computational Nuclear Many-body Physics, CO-PI with Scott Bogner. Grant number PHY-1404159
9. 2010-2015 15 MNOK from the Research Council of Norway, Multi-scale physics on the computer, Collaboration between Universities. Grant number ISP-Fysikk/216699 in Trondheim, Ås, and Oslo on research and education in computational physics
10. 2008-2012 1.5 MNOK for organizing the MSU-UT/ORNL-UiO network on Computational Nuclear Many-Body Theory. Sponsor, SiU, the Norwegian center for internationalization in higher education
11. 2003-2013 Co-PI of the Norwegian Center of Excellence Mathematics for Applications, with annual funding from the Research Council of Norway of 15 MNOK.