

Wouter Ryssens

Curriculum Vitae

New Haven, CT, USA

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Experience

Yale University

POSTDOCTORAL FELLOW

Nuclear Theory Group

New Haven, USA

Sept. 2018 - PRESENT

Supervisor: Prof. Y. Alhassid

Institut Physique Nucléaire de Lyon

POSTDOCTORAL FELLOW

Nuclear Theory Group

Lyon, France

Nov. 2016 - Sept. 2018

Supervisor: Dr. M. Bender

Education

Université Libre de Bruxelles

PHD IN THEORETICAL NUCLEAR PHYSICS

Symmetry conservation and breaking in nuclear mean-field models [available online here]

Brussels, Belgium

Oct. 2012 - Sep. 2016

Supervisor: Prof. P.-H. Heenen

Katholieke Universiteit Leuven

MASTER IN THEORETICAL PHYSICS, MAGNA CUM LAUDE

On the quantum-to-classical transition of primordial perturbations

Leuven, Belgium

Sept. 2010 - June 2012

Supervisor: dr. W. Struyve

Katholieke Universiteit Leuven

BACHELOR IN PHYSICS, CUM LAUDE

Leuven, Belgium

Sept. 2007 - June 2010

College van het Eucharistisch Hart

HIGH SCHOOL DIPLOMA, GREEK AND MATHEMATICS, MAGNA CUM LAUDE

Essen, Belgium

Sept. 2001 - June 2007

Peer Review

Referee Eur. Phys. J. A
Phys. Rev. C

Teaching

ULB Quantum Mechanics 2
Brussels Sept. 2015 - Dec. 2015

Communication

Native Dutch
Fluent French, English
Basic German, Spanish

Coding

Fluent Fortran, python, \LaTeX , bash, git
Intermediate MATLAB, make
Basic C, C++, java

References

Prof. Dr. Ir. P.-H. Heenen

UNIVERSITÉ LIBRE DE BRUXELLES

phheenen@ulb.ac.be

Prof. Dr. D. Davesne

INSTITUT DE PHYSIQUE NUCLÉAIRE DE LYON

davesne@ipnl.in2p3.fr

Dr. M. Bender

INSTITUT DE PHYSIQUE NUCLÉAIRE DE LYON

bender@ipnl.in2p3.fr

Selected Talks

Aug. 2018	PNTPM Seminar Broken symmetries in nuclear mean field approaches with Skyrme functionals	Brussels
May 2018	IPNL Seminar Towards symmetry-unrestricted Skyrme-HFB: MOCCa and its applications	Lyon
Apr. 2018	EVEREST Project Kick-off meeting (Beyond) mean-field calculations of (super)heavy nuclei	Leuven
Feb. 2018	Theory group IPNO seminar Towards symmetry-unrestricted Skyrme-HFB: MOCCa and its applications	Orsay
Nov. 2017	SSNET 2017 Towards symmetry unrestricted Skyrme-HFB: Rotation of exotic shapes.	Gif-sur-Yvette
Sept. 2017	Prospects on the description of odd mass nuclei Impact of methods and symmetries of quasiparticle excitations in mean-field theory.	Trento
Feb. 2017	3rd FIDIPRO-PICS mini-workshop On the way to symmetry-unrestricted HFB calculations in coordinate space.	Jyväskylä
Feb. 2016	Bormio Winter Meeting Symmetry unrestricted Skyrme mean-field study of heavy nuclei.	Bormio
Dec. 2015	2nd FIDIPRO-PICS mini-workshop Invited Speaker	University of Lyon
Nov. 2015	BriX network meeting Symmetry unrestricted Skyrme mean-field study of heavy nuclei: Even and odd Ra nuclei.	Katholieke Universiteit Leuven
Jul. 2015	The future of MREDF Theory workshop Symmetry unrestricted Skyrme mean-field study of heavy nuclei.	University of Warsaw
May 2015	BriX network meeting Symmetry unrestricted Skyrme mean-field study of heavy nuclei.	University of Liège
May 2015	FIDIPRO-PICS mini-workshop Precision of mean-field calculations on a mesh.	University of Jyväskylä
Nov. 2014	BriX network meeting Mean-field cluster configurations on a mesh.	SCK-CEN Mol
May 2014	BriX network meeting Symmetry breaking in mean-field theory.	University of Gent
Dec. 2013	BriX network meeting Mean-field description of rotating ellipsoids in the rare earth region.	Université Libre de Bruxelles
Nov. 2013	NESQ-FIDIPRO miniworkshop on EDFs and optimization Precision, Coulomb and the state of MOCCa.	University of Jyväskylä
May 2013	NESQ Collaboration meeting Development of the MOCCa code.	University of Bordeaux
Mar. 2013	BriX network meeting Symmetry breaking in mean-field calculations.	Oostende

Extracurricular Activity

Music Academy Essen

OBOE STUDIES, MAGNA CUM LAUDE

Essen, Belgium

Sept. 1998 - Jun. 2007

Cities Conservatory of Leuven

ENGLISH HORN STUDIES, SUMMA CUM LAUDE

ADVANCED GENERAL MUSIC THEORY, MAGNA CUM LAUDE

Leuven, Belgium

Sept. 2007 - Jun. 2012

Sept. 2008 - Jun. 2011

Wind Band 'Vlijt en Volharding'

ASSISTANT DIRECTOR & PRESIDENT OF MUSICAL ADVISORY COMMITTEE

Essen, Belgium

Jan. 2013 - Sept. 2016

University Symphonic Orchestra of the KU Leuven

BOARD PRESIDENT

Leuven, Belgium

Jul. 2010 - Jun. 2011

Publications

1. W. Ryssens, M. Bender and P.-H. Heenen,
Skyrme-HFB mean-field study of Thorium isotopes: ground state octupole deformation and shape evolution along rotational bands in ^{222}Th , ^{223}Th and ^{224}Th .
In preparation.
2. E. Verstraelen *et al.*,
Laser spectroscopy of the charge radii of Ac isotopes,
in preparation.
3. W. Ryssens, M. Bender and P.-H. Heenen,
Skyrme pseudopotentials with N2LO and N3LO terms. I. Notation and implementation of the local central terms in 3D coordinate space representation.
In preparation.
4. W. Ryssens, M. Bender and P.-H. Heenen,
Iterative optimization of nuclear energy density functionals in coordinate space. I. Heavy-Ball Dynamics and Density preconditioning,
Submitted to EPJA, [arXiv:1812.08262](#) [nucl-th]
5. W. Ryssens, M. Bender, K. Bennaceur, P.-H. Heenen and J. Meyer,
The impact of the surface energy coefficient on the deformation properties of atomic nuclei as predicted by Skyrme energy density functionals.
Submitted to Phys. Rev. C., [arXiv:1809.04406](#) [nucl-th]
6. S. Sels *et al.*
In-source laser resonance-ionization spectroscopy of neutron-deficient $^{175-185}\text{Hg}$ isotopes,
Accepted for publication in Phys. Rev. C.
7. W. Ryssens, M. Bender and P.-H. Heenen,
Towards symmetry-unrestricted Skyrme-HFB in coordinate-space representation: the example of rotational bands of the octupole deformed nucleus ^{222}Th .
Acta Physica Polonica B, Vol. 49 (2018), [arxiv:1712.03734](#) [nucl-th]
8. M. Venhart *et al.*,
De-excitation of the strongly coupled band in ^{177}Au and implications for core intruder configurations in the light Hg isotopes
Phys. Rev. C **95**, 061302 (2017).
9. W. Ryssens, P.-H. Heenen and M. Bender,
Symmetry unrestricted Skyrme mean-field study of heavy nuclei,
in proceedings of 54th International Winter Meeting on Nuclear Physics PoS(BORMIO2016) 033,
[arXiv:11611.01300](#) [nucl-th]
10. W. Ryssens, P.-H. Heenen and M. Bender
Numerical accuracy of mean-field calculations in coordinate space,
Phys. Rev. C **92**, 064318 (2015), [arXiv:1509.00252](#) [nucl-th]
11. W. Ryssens, V. Hellemans, M. Bender and P.-H. Heenen,
Solution of the Skyrme-HF+BCS equation on a 3D mesh, II: A new version of the EV8 code,
Comp. Phys. Comm. **187**, 175 (2015), [arXiv:1405.1897](#) [nucl-th]