

# List of publications of ESNT from 2004 to 2021

*Publications based on works performed by physicists in the framework of the ESNT projects during their stays as visitors at CEA. In bold the one(s) directly involved as a long-stay visitor or post-doc at ESNT when the paper is prepared. These publications include directly a reference to the ESNT framework (affiliation or an acknowledgement for the support).*

Updated list: <http://esnt.cea.fr/index.php?id=10&ref=1>

## Liste des publications

(comportant une référence à l'ESNT, exemples : remerciements ou affiliation CEA, ESNT)

### 2021

- ◆ *Emergent four-body parameter in universal two-species bosonic systems*  
**L. Contessi**, J. Kirscher, M.P. Valderrama,  
Phys. Lett. A **408**, 127479 (2021). arXiv:2103.14711 doi : 10.1016/j.physleta.2021.127479
- ◆ *Multi-fermion systems with contact theories.*  
M. Schäfer, **L. Contessi**, J. Kirscher, J. Mares,  
Phys. Lett. B **816**, 136194 (2021). arXiv:2003.09862 doi: 10.1016/j.physletb.2021.136194
- ◆ *Triple-X and beyond: hadronic molecules of three and more X(3872).*  
**L. Contessi**, J. Kirscher, M. P. Valderrama  
Phys. Rev. D **103**, 056001 (2021). arXiv:2008.12268 doi: 10.1103/PhysRevD.103.056001
- ◆ *Nucleonic localisation and alpha radioactivity,*  
J-P. Ebran, E. Khan, **R-D. Lasserri**,  
J. Phys. G: Nucl. Part. Phys. **48**, 025106 (2021). arXiv: 2001.07436 doi:10.1088/1361-6471/abcf25
- ◆ *Bogoliubov many-body perturbation theory under constraint,*  
P. Demol, M. Frosini, **A. Tichai**, V. Somà, T. Duguet  
Annals of Physics **424**, 168358 (2021). arXiv:2002.02724 doi: 10.1016/j.aop.2020.168358
- ◆ *ADG: Automated generation and evaluation of many-body diagrams. II. Particle-number projected Bogoliubov many-body perturbation theory,*  
P. Arthuis, **A. Tichai**, J. Ripoche, T. Duguet,  
Comput. Phys. Comm. **261**, 107677 (2021).  
arXiv:2007.01661 doi 10.1016/j.cpc.2020.107677  
Associated code available on <https://github.com/adgproject/adg/>
- ◆ *Many-body perturbation theories for finite nuclei,*  
**A. Tichai**, R. Roth, T. Duguet,  
contribution to 'Frontiers in Physics' (2020). arXiv:2001.10433 [nucl-th]
- ◆ *Symmetry reduction of tensor networks in many-body theory. I. Automated symbolic evaluation of SU(2) algebra,*  
**A. Tichai**, R. Wirth, J. Ripoche, T. Duguet arXiv:2002.02724  
Accompanying source code available at [github.com/radnut/amc](https://github.com/radnut/amc)

- ◆ *Taming Nuclear Complexity with a Committee of Multilayer Neural Networks*,  
**R.-D. Lasserri**, D. Regnier, J.-P. Ebran, and A. Penon,  
 Phys. Rev. Lett. **124**, 162502 (2020). doi:10.1103/PhysRevLett.124.162502
- ◆ *Zero-pairing limit of Hartree-Fock-Bogoliubov reference states*,  
 T. Duguet, B. Bally, **A. Tichai**,  
 Phys. Rev. C **102**, 054320 (2020). arXiv:2006.02871 doi 10.1103/PhysRevC.102.054320
- ◆ *Alpha-particle condensation: A nuclear quantum phase transition*,  
 J.-P. Ebran, M. Girod, E. Khan, **R.-D. Lasserri**, and P. Schuck  
 Phys. Rev. C **102**, 014305 (2020).doi:10.1103/PhysRevC.102.014305
- ◆ *In-beam gamma-ray and electron spectroscopy of  $^{249,251}\text{Md}$* ,  
 R. Briselet, Ch. Theisen, B. Sulignano, M. Airiau, K. Auranen, D. M. Cox, F. Déchery, A. Drouart, Z. Favier,  
 B. Gall, T. Goigoux, T. Grahn, P. T. Greenlees, K. Hauschild, A. Herzan, R.-D. Herzberg, U. Jakobsson, R.  
 Julin, S. Juutinen, J. Konki, M. Leino, A. Lopez-Martens, A. Mistry, P. Nieminen, J. Pakarinen, P.  
 Papadakis, P. Peura, P. Rahkila, J. Rubert, P. Ruotsalainen, M. Sandzelius, J. Sarén, C. Scholey, J. Sorri, S.  
 Stolze, J. Uusitalo, M. Vandebrouck, A. Ward, M. Zielinska, **B. Bally**, M. Bender, W. Ryssens,  
 Phys. Rev. C **102**, 014307 (2020). doi: 10.1103/PhysRevC.102.014307
- ◆ *Microscopic description of the self-conjugate  $^{108}\text{Xe}$  and  $^{104}\text{Te}$  alpha-decay chain*,  
 F. Mercier, J. Zhao, **R.-D. Lasserri**, J.-P. Ebran, E. Khan, T. Nikšić, and D. Vretenar,  
 Phys. Rev. C **102**, 011301(R) (2020). doi:10.1103/PhysRevC.102.011301
- ◆ *Restoration of the Natural  $E(1/2+1) - E(3/2+1)$  Energy Splitting in Odd-K Isotopes Towards  $N = 40$* ,  
 Y.L. Sun, A.Obertelli, P.Doornenbal, C.Barbieri, Y.Chazono, T.Duguet, H.N.Liu, P.Navratil, F.Nowacki,  
 K.Ogata, T.Otsuka, **F.Raimondi**, V.Soma, Y.Utsuno, K.Yoshida, N.Achouri, H.Baba, F.Browne, D.Calvet,  
 F.Chateau, S.Chen, N.Chiga, A.Corsi, M.L.Cortes, A.Delbart, J.-M.Gheller, A.Giganon, A.Gillibert, C.Hilaire,  
 T.Isobe, T.Kobayashi, Y.Kubota, V.Lapoux, T.Motobayashi, I.Murray, H.Otsu, V.Panin, N.Paul,  
 W.Rodriguez, H.Sakurai, M.Sasano, D.Steppenbeck, L.Stuhl, Y.Togano, T.Uesaka, K.Wimmer, K.Yoneda,  
 O.Aktas, T.Aumann, L.X.Chung, F.Flavigny, S.Franchoo, I.Gasparic, R.-B.Gerst, J.Gibelin, K.I.Hahn, D.Kim,  
 T.Koiwai, Y.Kondo, P.Koseoglou, J.Lee, C.Lehr, B.D.Linh, T.Lokotko, M.MacCormick, K.Moschner,  
 T.Nakamura, S.Y.Park, D.Rossi, E.Sahin, D.Sohler, P.-A.Soderstrom, S.Takeuchi, H.Tornqvist, V.Vaquero,  
 V.Wagner, S.Wang, V.Werner, X.Xu, H.Yamada, D.Yan, Z.Yang, M.Yasuda, L.Zanetti  
 Phys.Lett.B **802**,135215 (2020). doi: 10.1016/j.physletb.2020.135215
- ◆ *Novel chiral Hamiltonian and observables in light and medium-mass nuclei*,  
 V. Somà, P. Navràtil, **F. Raimondi**, C. Barbieri, and T. Duguet,  
 Phys.Rev. C **101**, 014318 (2020). doi: 10.1103/PhysRevC.101.014318
- ◆ *Improved many-body expansions from eigenvector continuation*,  
 P. Demol, T. Duguet, A. Ekström, M. Frosini, K. Hebeler, S. König, D. Lee, A. Schwenk, V. Somà, **A. Tichai**,  
 Phys. Rev. C **101**, 041302 (2020) arXiv:1911.12578 doi: 10.1103/PhysRevC.101.041302
- ◆ *Normal-ordered k-body approximation in particle-number-breaking theories*,  
 J. Ripoche, **A. Tichai**, T. Duguet, Eur. Phys. J. A **56**, 40 (2020).  
 arXiv:1908.00765 doi: 10.1140/epja/s10050-020-00045-8

- ◆ *Quasifree Neutron Knockout from  $^{54}\text{Ca}$  Corroborates Arising  $N=34$  Neutron Magic Number*, S. Chen, J. Lee, P. Doornenbal, A. Obertelli, C. Barbieri, Y. Chazono, P. Navrátil, K. Ogata, T. Otsuka, **F. Raimondi**, V. Somà, Y. Utsuno, K. Yoshida, H. Baba, F. Browne, D. Calvet, F. Château, N. Chiga, A. Corsi, M.L. Cortés, A. Delbart, J.-M. Gheller, A. Giganon, A. Gillibert, C. Hilaire, T. Isobe, J. Kahlbow, T. Kobayashi, Y. Kubota, V. Lapoux, H. N. Liu, T. Motobayashi, I. Murray, H. Otsu, V. Panin, N. Paul, W. Rodriguez, H. Sakurai, M. Sasano, D. Steppenbeck, L. Stuhl, Y.L. Sun, Y. Togano, T. Uesaka, K. Wimmer, K. Yoneda, et al., *Phys. Rev. Lett.* **123**, 142501 (2019). doi:10.1103/PhysRevLett.123.142501
- ◆ *Core-polarization effects and effective charges in  $O$  and  $Ni$  isotopes from chiral interactions*, **F. Raimondi**, C.Barbieri, *Phys. Rev. C* **100**, 024317 (2019). doi: 10.1103/PhysRevC.100.024317
- ◆ *Nuclear electromagnetic dipole response with the self-consistent Green's function formalism* **F.Raimondi**, C.Barbieri, *Phys. Rev. C* **99**, 054327 (2019). doi: 10.1103/PhysRevC.99.054327
- ◆ *Pre-processing the nuclear many-body problem: Importance truncation versus tensor factorization techniques*, **A. Tichai**, J. Ripoche, T. Duguet, *Eur. Phys. J. A* **55**, 90 (2019). doi:10.1140/epja/i2019-12758-6
- ◆ *Natural orbitals for ab initio no-core shell model calculations*, **A. Tichai**, J. Müller, K. Vobig, R. Roth, *Phys. Rev. C* **99**, 034321 (2019). doi:10.1103/PhysRevC.99.034321
- ◆ *Tensor-decomposition techniques for ab initio nuclear structure calculations: from chiral nuclear potentials to ground-state energies*, **A. Tichai**, R. Schutski, G. E. Scuseria, T. Duguet, *Phys. Rev. C* **99**, 034320 (2019). doi:10.1103/PhysRevC.99.034320
- ◆ *ADG: Automated generation and evaluation of many-body diagrams, I. Bogoliubov many-body perturbation theory*, P. Arthuis, T. Duguet, **A. Tichai**, R.-D. Lasserri, J.-P. Ebran, *Comp. Phys. Comm.* **240**, 202-227 (2019). arXiv :1809.01187 doi : 10.1016/j.cpc.2018.11.023

2018

- ◆ *Mean-field approach to reconstructed neutrino energy distributions in accelerator-based experiments*, A. Nikolakopoulos, M. Martini, M. Ericson, N. Van Dessel, R. González-Jiménez, and N. Jachowicz Phys. Rev. C **98**, 054603 (2018). doi:10.1103/PhysRevC.98.054603  
*Work done partially during a visit of A. Nikolakopoulos at ESNT.*
  
- ◆ *Bogoliubov many-body perturbation theory for open-shell nuclei*, A. **Tichai**, P. Arthuis, T. Duguet, V. Somà, H. Hergert, R. Roth, Phys. Lett. B **786**, 195-200 (2018). arXiv :1806.10931, doi:10.1016/j.physletb.2018.09.044
  
- ◆ *Open-Shell Nuclei from No-Core Shell Model with Perturbative Improvement*, A. **Tichai**, E. Gebrerufael, K. Vobig, R. Roth, Phys. Lett. B **786**, 448-452 (2018). arXiv :1703.05664, doi:10.1016/j.physletb.2018.10.029
  
- ◆ *Norm overlap between many-body states: Uncorrelated overlap between arbitrary Bogoliubov product states*, B. **Bally**, T. Duguet, Phys. Rev. C **97**, 024304 (2018). arXiv: 1704.05324, doi : 10.1103/PhysRevC.97.024304
  
- ◆ *Neutrino-nucleus cross sections and oscillation experiments*, T. Katori, M. **Martini**, J.Phys. G **45**, 013001 (2018). arXiv:1611.07770v1
  
- ◆ *NuSTEC White Paper: Status and Challenges of Neutrino-Nucleus Scattering*, L. Alvarez-Ruso, M. Sajjad Athar, M.B. Barbaro, D. Cherdack, M.E. Christy, P. Coloma, T.W. Donnelly, S. Dytman, A. de Gouvea, R.J. Hill, P. Huber, N. Jachowicz, T. Katori, A.S. Kronfeld, K. Mahn, M. **Martini**, J.G. Morfin, J. Nieves, G. Perdue, R. Petti, D.G. Richards , F. Sanchez, T. Sato, J.T. Sobczyk, G.P. Zeller, *Progress in Particle and Nuclear Physics* **100**, 1 (2018). arXiv:1706.03621 ; doi:10.1016/j.ppnp.2018.01.006

- ◆ *De-excitation of the strongly coupled band in  $^{177}\text{Au}$  and implications for core intruder configurations in the light Hg isotopes*, M. Venhart, F. A. Ali, W. Ryssens, J. L. Wood, D. T. Joss, A. N. Andreyev, K. Auranen, **B. Bally**, M. Balogh, M. Bender, et al., *Phys. Rev. C* **95**, 061302(R) (2017). doi: 10.1103/PhysRevC.95.061302
- ◆ *Unexpected high-energy  $\gamma$  emission from decaying exotic nuclei*, A. Gottardo, D. Verney, I. Deloncle, S. Peru, C. Delafosse, S. Roccia, I. Matea, C. Sotty, C. Andreoiu, C. Costache, M.-C. Delattre, A. Etile, S. Franchoo, C. Gaulard, J. Guillot, F. Ibrahim, M. Lebois, M. MacCormick, N. Marginean, R. Marginean, **M. Martini**, C. Mihai, I. Mitu, L. Olivier, C. Portail, L. Qi, B. Roussiere, L. Stan, D. Testov, J. Wilson, D. T. Yordanov, *Phys. Lett. B* **772**, 359 (2017). doi: 10.1016/j.physletb.2017.06.050
- ◆ *Electromagnetic dipole and Gamow-Teller responses of even and odd  $^{90-94}_{40}\text{Zr}$  isotopes in QRPA calculations with the D1M Gogny force*, I. Deloncle, S. Péru, **M. Martini**, *Eur. Phys. J. A*, **53** 8 (2017) 170. doi: 10.1140/epja/i2017-12354-x
- ◆ *E1 and M1 strength functions from Average Resonance Capture data*, J. Kopecky, S. Goriely, S. Péru, S. Hilaire, **M. Martini**, *Phys. Rev. C* **95**, 054317 (2017). doi: 10.1103/PhysRevC.95.054317
- ◆ *Are there Signatures of Harmonic Oscillator Shell Gaps Far From Stability? – First Spectroscopy of  $^{110}\text{Zr}$* , N. Paul, A. Corsi, A. Obertelli, P. Doornenbal, G. Authelet, H. Baba, **B. Bally**, M. Bender, D. Calvet, F. Château, S. Chen, J.-P. Delaroche, A. Delbart, J.-M. Gheller, A. Giganon, A. Gillibert, M. Girod, P. H. Heenen, V. Lapoux, J. Libert, T. Motobayashi, M. Niikura, T. Otsuka, T. R. Rodríguez, J. Y. Roussé, H. Sakurai, C. Santamaria, N. Shimizu, D. Steppenbeck, R. Taniuchi, T. Togashi, Y. Tsunoda, T. Uesaka, et al., *Phys. Rev. Lett.* **118**, 032501 (2017). doi: 10.1103/PhysRevLett.118.032501  
*Article of experimentalists from the SPhN LENA group in collaboration with theorists.*
- ◆ *Beyond-mean-field correlations and the description of superheavy elements*, Paul-Henri Heenen, Benjamin Bally, Michael Bender and Wouter Ryssens, Nobel Symposium NS 160 – Chemistry and Physics of Heavy and Superheavy Elements, EPJ Web of Conferences **131**, 02001 (2016). <https://doi.org/10.1051/epjconf/201613102001>
- ◆ *Modeling the double charge exchange response function for a tetraneutron system*, R. Lazauskas, J. Carbonell, and E. Hiyama, *Prog. Theor. Exp. Phys.* 073D03 (2017). <https://doi.org/10.1093/ptep/ptx078>  
*Works partly done during the ESNT workshops organized in 2016 and 2017 “Computation of three- and four-neutron resonances” and “Dynamics of highly unstable exotic light nuclei and few-body systems”. (acknowledgements for the ESNT support).*

- ◆ *Radii and binding energies in oxygen isotopes: a challenge for the nuclear forces.*  
V. Lapoux, V. Somà, C. Barbieri, H. Hergert, J. D. Holt, R. Stroberg,  
Phys. Rev. Lett. **117**, 052501 (2016). doi: <https://doi.org/10.1103/PhysRevLett.117.052501>  
*Works initiated during the ESNT workshop in April 2014, "Radioactive ion beam experiments and three-nucleon forces".*
- ◆ *On the possibility of generating a 4-neutron resonance with a  $T=3/2$  isospin 3-neutron force,*  
J. Carbonell, E. Hiyama, R. Lazauskas, M. Kamimura, Phys. Rev. C **93**, 044004 (2016). *Works done partly during the ESNT workshop in October 2015, "Computation of three- and four-neutron resonances".*
- ◆ *Low-energy modification of the  $\gamma$  strength function of the odd-even nucleus  $^{115}\text{In}$ ,*  
M. Versteegen, D. Denis-Petit, V. Méot, Th. Bonnet, M. Comet, F. Gobet, F. Hannachi, M. Tarisien, P. Morel, **M. Martini**, and S. Péru, Phys. Rev. C **94**, 044325 (2016).
- ◆ *Gogny-Hartree-Fock-Bogolyubov plus quasiparticle random-phase approximation predictions of the M1 strength function and its impact on radiative neutron capture cross section,*  
S. Goriely, S. Hilaire, S. Péru, **M. Martini**, I. Deloncle and F. Lechaftois, Phys. Rev. C **94**, 044306 (2016).
- ◆ *Nuclear response functions with finite range Gogny force: tensor terms and instabilities,*  
A. De Pace and **M. Martini**, Phys. Rev. C **94**, 024342 (2016).
- ◆ *Large-scale deformed quasiparticle random-phase approximation calculations of the  $\gamma$ -ray strength function using the Gogny force,* **M. Martini**, S. Péru, S. Hilaire, S. Goriely and F. Lechaftois,  
Phys. Rev. C **94**, 014304 (2016).
- ◆ *Emission of neutron-proton and proton-proton pairs in electron scattering induced by meson-exchange currents,* I. Ruiz Simo, J.E. Amaro, M.B. Barbaro, A. De Pace, J.A. Caballero, G.D. Megias, T.W. Donnelly,  
Phys. Rev. C **94**, 054610 (2016); doi: 10.1103/PhysRevC.94.054610  
*Work discussions of the authors during the ESNT workshop held in 18-22 April 2016: "Two-body current contributions in neutrino-nucleus scattering". (Acknowledgements for the ESNT support).*
- ◆ *The impact of low-energy nuclear excitations on neutrino-nucleus scattering at MiniBooNE and T2K kinematics,* V. Pandey, N. Jachowicz, **M. Martini**, R. González-Jiménez, J. Ryckebusch, T. Van Cuyck and N. Van Dessel, Phys. Rev. C **94**, 054609 (2016).
- ◆ *Influence of short-range correlations in neutrino-nucleus scattering,*  
T. Van Cuyck, N. Jachowicz, R. González-Jiménez, **M. Martini**, V. Pandey, J. Ryckebusch and N. Van Dessel, Phys. Rev. C **94**, 024611 (2016).
- ◆ *Electron-neutrino scattering off nuclei from two different theoretical perspectives,*  
**M. Martini**, N. Jachowicz, M. Ericson, V. Pandey, T. Van Cuyck and N. Van Dessel,  
Phys. Rev. C **94**, 015501 (2016).
- ◆ *Assessing the role of nuclear effects in the interpretation of the MiniBooNE low-energy anomaly,*  
M. Ericson, M. V. Garzelli, C. Giunti and **M. Martini**, Phys. Rev. D **93**, 073008 (2016).

## 2015

◆ *Nonobservable nature of the nuclear shell structure: Meaning, illustrations, and consequences*, T. Duguet, H. Hergert, J. D. Holt, and **V. Somà**, Phys. Rev. C **92**, 034313 (2015).  
doi: <https://doi.org/10.1103/PhysRevC.92.034313>

◆ *Ab initio Bogoliubov coupled cluster theory for open-shell nuclei*, **A. Signoracci**, T. Duguet, G. Hagen, and G. R. Jansen, Phys. Rev. C **91**, 064320 (2015).  
doi: <https://doi.org/10.1103/PhysRevC.91.064320>

◆ *Weakly bound Borromean structures of the exotic  ${}^6,8\text{He}$  nuclei through direct reactions on proton*, V. Lapoux and N. Alamanos, Eur. Phys. J. A. **51**, 91 (2015).  
*Works discussed during the ESNT workshop in April 2014, "Radioactive ion beam experiments and three-nucleon forces"*.

## 2014

◆ *Ab initio-driven nuclear energy density functional method, a proposal for safe/correlated/improvable parametrizations of the off-diagonal EDF kernels*, T. Duguet, M. Bender, J.-P. Ebran, **T. Lesinski**, and V. Somà, Eur. Phys. J. A **51** 12 (2015) 162,  
Topical issue, "Perspectives on Nuclear Data for the Next Decade", International Workshop PND2-2, CEA DAM, October 2014.

◆ *Quasiparticle coupled cluster theory for pairing interactions*, T. M. Henderson, G. E. Scuseria, J. Dukelsky, **A. Signoracci**, and T. Duguet, Phys. Rev. C **89**, 054305 (2014). doi: <https://doi.org/10.1103/PhysRevC.89.054305>

◆ *Density functional theory with spatial-symmetry breaking and configuration mixing*, **T. Lesinski**, Phys. Rev. C **89**, 044305 (2014).

◆ *Ab initio self-consistent Gorkov-Green's function calculations of semi-magic nuclei: Numerical implementation at second order with a two-nucleon interaction*, **V. Somà**, C. Barbieri, and T. Duguet, Phys. Rev. C **89**, 024323 (2014).

◆ **A. Signoracci** and T. Duguet, *Evaluation of errors for ESPE in neutron-rich oxygen isotopes*, in preparation.

◆ **G. Potel**, A. Idini, F. Barranco, E. Vigezzi, R. A. Broglia, *Pairing interaction and two-nucleon transfer reactions*, arxiv nucl-th: 1404.1317 (2014) (NB: affiliation SPhN).

## 2013

◆ *Ab-initio Gorkov-Green's function calculations of open-shell nuclei*,  
**V. Somà**, C. Barbieri, T. Duguet, Phys. Rev. C **87**, 011303(R) (2013).

*In collaboration with experimentalists: F. Flavigny, ..., A. Signoracci, et al., Limited Asymmetry Dependence of Correlations from Single Nucleon Transfer*, Phys. Rev. Lett. **110**, 122503 (2013).

## 2012

◆ *Ab-initio take on effective single-particle energies in doubly closed shell nuclei*,  
T. Duguet and **G. Hagen**, Phys. Rev. C **85**, 034330 (2012).

◆ *Self-consistent Gorkov Green's function calculations of one-nucleon spectral properties*,  
**V. Somà**, T. Duguet, C. Barbieri, J. Phys. Conf. Ser. **337** (2012) 012001.

◆ *Self-consistent Green's functions calculation of the nucleon mean-free path*,  
A. Rios, **V. Somà**, Phys. Rev. Lett. **108**, 012501 (2012).

## 2011

◆ *Neutrinoless double beta decay studied with configuration mixing methods*,  
**T.R. Rodríguez**, G. Martinez-Pinedo, Progress in Particle and Nuclear Physics **66**, 436 (2011).

◆ *Gorkov self-consistent Green's function calculations of semi-magic nuclei*,  
**V. Somà**, T. Duguet, C. Barbieri, J. Phys. Conf. Ser. **321** (2011) 012039.

◆ *Ab-initio self-consistent Gorkov-Green's function calculations of semi-magic nuclei*,  
I. Formalism at second order with a two-nucleon interaction,  
**V. Somà**, T. Duguet, C. Barbieri, Phys. Rev. C **84**, 064317 (2011).

## 2010

◆ *Isospin mixing and the continuum coupling in weakly bound nuclei* ,  
**N. Michel**, W. Nazarewicz, and M. Ploszajczak, Phys. Rev. C **82**, 044315 (2010).

◆ *Energy Density Functional Study of Nuclear Matrix Elements for Neutrinoless  $\beta\beta$  Decay*,  
**T. R. Rodríguez** and G. Martinez-Pinedo, Phys. Rev. Lett. **105**, 252503 (2010).



2009

- ◆ *Particle-number restoration within the energy density functional formalism*  
**M. Bender**, T. Duguet, D. Lacroix, Phys. Rev. C **79**, 044319 (2009).
- ◆ *Non-empirical pairing energy functional in nuclear matter and finite nuclei*  
K. Hebeler, T. Duguet, **T. Lesinski**..., submitted to PRC ; arXiv:0904.3152.
- ◆ *An "archaeological" quest for galactic supernova neutrinos*, **R. Lazauskas**, C. Lunardini and C. Volpe,  
Journ. Cosmol. And Astro. Physics **04** (2009) 029.
- ◆ *Up-to N3LO heavy-baryon chiral perturbation theory calculation for the M1 properties of three-nucleon systems*, Y-Ho Song, **R. Lazauskas**, and T-S Park, Phys. Rev. C **79**, 064002 (2009).
- ◆ *Critical temperature for  $\alpha$ -particle condensation within a momentum-projected mean-field approach*,  
T. Sogo, **R. Lazauskas**, G. Röpke, and P. Schuck, Phys. Rev. C **79**, 051301 (2009).
- ◆ *Density matrix renormalization group approach to two-fluid open many-fermion systems*,  
J. Rotureau, **N. Michel**, W. Nazarewicz, M. Płoszajczak, and J. Dukelsky,  
Phys. Rev. C **79**, 014304 (2009)
- ◆ *Shell model in the complex energy plane*  
**N. Michel**, W. Nazarewicz, M. Płoszajczak..., J. Phys. G:Topical Review, **36**, 013101 (2009).
- ◆ *A simple and efficient numerical scheme to integrate non-local potentials*,  
**N. Michel**, Eur. Phys. J. A **42**, 523 (2009)
- ◆ *Role of triaxiality in the ground state shape of neutron rich Yb, Hf, W, Os, and Pt isotopes*, L.M. Robledo,  
**R. Rodríguez -Guzman**, P. Sarriguren,  
Journal of Physics G **arXiv:0906.0057v1** (2009)
- ◆ *Halo phenomenon in finite many-fermion systems. Atom-positron complexes and large-scale study of atomic nuclei*, V. Rotival, **K. Bennaceur**, T. Duguet, Phys. Rev. C **79**, 054309 (2009).

## 2008

- ◆ *Gamow-Hartree-Fock-Bogoliubov method : Representation of quasiparticles with Berggren sets of wave functions*, **N. Michel**, K. Matsuyanagi and M.V. Stoitsov, Phys. Rev. C **78**, 044319 (2008)
- ◆ *Evolution of nuclear shapes in medium mass isotopes from a microscopic perspective*, L. M. Robledo, **R. Rodríguez -Guzman**, P. Sarriguren, Phys. Rev. C **78**, 034314 (2008).
- ◆ *Configuration mixing of angular-momentum and particle-number projected triaxial Hartree-Fock-Bogoliubov states using the Skyrme energy density functional*, **M. Bender** and P.-H. Heenen, Phys. Rev. C **78**, 024309 (2008).
- ◆ *Effective shell model Hamiltonians from density functional theory: Quadrupolar and pairing correlations*, **R. Rodríguez -Guzman**, Y. Alhassid, G.F. Bertsch, Phys. Rev. C **77**, 064308 (2008).
- ◆ *Shape transitions in neutron-rich Yb, Hf, W, Os, and Pt isotopes within a Skyrme Hartree-Fock + BCS approach*, P. Sarriguren, **R. Rodríguez -Guzman**, L. M. Robledo, Phys. Rev. C **77**, 064322 (2008).
- ◆ *New efficient method for performing Hartree-Fock-Bogoliubov calculations for weakly bound nuclei*, M. Stoitsov, **N. Michel**, and K. Matsuyanagi, Phys. Rev. C **77**, 054301(2008).

## 2007

- ◆ *Nuclear charge radii of neutron deficient lead isotopes beyond N=104 mid shell investigated by in-source laser spectroscopy*, H. De Witte, A. N. Andreyev... **M. Bender**, et al., Phys. Rev. Lett. **98**, 112502 (2007).
- ◆ *Global study of the spectroscopic properties of the first 2+ state in even-even nuclei*, B. Sabbey, **M. Bender**, G. F. Bertsch, et al., Phys. Rev. C **75**, 044305 (2007).
- ◆ *Large-amplitude Qn-Qp collectivity in the neutron-rich oxygen isotope 200*, A. P. Severyukhin, **M. Bender**, H. Flocard, et al., Phys. Rev. C **75**, 064303 (2007).
- ◆ *Tensor part of the Skyrme energy density functional: Spherical nuclei*, T. Lesinski, **M. Bender**, **K. Bennaceur**, T. Duguet and J. Meyer, Phys. Rev. C **76**, 014312 (2007).  
doi: <https://doi.org/10.1103/PhysRevC.76.014312>
- ◆ *Pairing correlations beyond the mean field*, **M. Bender** and T. Duguet, Int. J. Mod. Phys. E **16**, 222-236 (2007).

## 2006

- ◆ *Beyond mean-field study of excited states: Analysis within the Lipkin model*,  
A.P. Severyukhin, **M. Bender**, P.-H. Heenen, Phys. Rev. C **74**, 024311 (2006).
- ◆ *Shape coexistence in neutron-deficient Kr isotopes: Constraints on the single-particle spectrum of self-consistent mean-field models from collective excitations*,  
**M. Bender**, P. Bonche, P.-H. Heenen, Phys. Rev. C **74**, 024312 (2006).
- ◆ *Spectroscopy and single-particle structure of the odd-Z heavy elements 255Lr, 251Md, and 247Es*, A. Chatillon, Ch. Theisen... **M. Bender et al.**, Eur. Phys. J. **A30**, 397-411 (2006).
- ◆ *Isvector splitting of nucleon effective masses, ab-initio benchmarks and extended stability criteria for Skyrme energy functionals*,  
T. Lesinski, **K. Bennaceur**, T. Duguet..., Phys. Rev. C **74**, 044315 (2006).
- ◆ *Density matrix renormalisation group and the nuclear shell model*,  
S. Pittel and **N. Sandulescu**, Phys. Rev. C **73**, 014301 (2006).
- ◆ *Physical origin of density dependent forces of Skyrme type within the quark-meson coupling model*,  
P.A.M. Guichon, H.H. Matevosyan, **N. Sandulescu et al.**, Nucl. Phys. **A772**, 1 (2006).
- ◆ *Quasiparticle resonances in the BCS approach*,  
R. Betan, **N. Sandulescu**, T. Vertse, Nucl. Phys. **A771**, 93 (2006)
- ◆ *Giant neutron halos in the non-relativistic HFB approach*  
M. Grasso, S. Yoshida, **N. Sandulescu et al.**, Phys. Rev. C **74**, 064317 (2006).

## 2005

- ◆ *Complex shell model representation including antibound states*,  
R. Id Betan, R. J. Liotta, **N. Sandulescu**, Phys. Rev. C **72**, 054322 (2005).