

## FILOMENA NUNES

Professor of Physics  
Department of Physics and Astronomy  
FRIB, Michigan State University  
E. Lansing, MI 48824-1321

Phone: (517) 908-7471  
Fax: (517) 353-5967  
Email: [nunes@frib.msu.edu](mailto:nunes@frib.msu.edu)  
[people.nscl.msu.edu/~nunes](http://people.nscl.msu.edu/~nunes)

### Education and Training

Instituto Superior Tecnico, Physics Engineering, 1987/88-1991/92

University of Surrey, PhD in Theoretical Nuclear Physics, 1992/93 1994/95

### Research and Professional Experience

Managing Director of FRIB Theory Alliance (2015 - )

Full Professor, Department of Physics and Astronomy and NSCL, MSU (2013 - )

Head of Department of Theoretical Nuclear Science at NSCL (2010 – 2016)

Associate Professor, Department of Physics and Astronomy/NSCL, MSU (2009 – 2013)

Assistant Professor, Department of Physics and Astronomy and NSCL, MSU (2003 – 2009)

Assistant Professor, Physics Department, Instituto Superior Tecnico (IST) (1999 – 2004)

Associate Professor, Universidade Fernando Pessoa, Portugal (1998 – 2003)

Research fellow, CENTRA (Centre for Astrophysics), IST, Portugal (1996 – 1998)

Research fellow, University of Surrey, England (1995 – 1996)

### Honors and awards (selected)

2015	Fellow of the American Physical Society
2017	Inspirational Women of the Year (MSU)
2018	William Beal Outstanding Faculty Award (MSU)
2021	Division of Nuclear Physics Service award
2021	Fellow of the American Association for the Advancement of Science

### Selection of Publications:

1. *Predictions for (p,n) charge-exchange reactions with uncertainty quantification*; T. Whitehead, T. Poxon-Pearson, F.M. Nunes and G. Potel Phys. Rev. C 105, 054611 (2022)
2. *Why are theorists excited about exotic nuclei*, F. Nunes; Physics Today 74, 34 May (2021)
3. *Get on the BAND Wagon: A Bayesian Framework for Quantifying Model Uncertainties in Nuclear Dynamics*; D. R. Phillips, R. J. Furnstahl, U. Heinz, T. Maiti, W. Nazarewicz, F. M. Nunes, M. Plumlee, M. T. Pratola, S. Pratt, F. G. Viens, S. M. Wild; J. Phys. G (2021) 48, 072001.
4. *Toward emulating nuclear reactions using eigenvector continuation* C. Drischler, M. Quinonez, P. G. Giuliani, A. E. Lovell, F. M. Nunes Phy. Letts. B 823, 136777 (2021).
5. *Direct Comparison between Bayesian and Frequentist Uncertainty Quantification for Nuclear Reactions*, G.B. King, A.E. Lovell, L. Neufcourt, F.M. Nunes, Phys. Rev. Lett. 122, 232502 (2019)

6. *Nuclear reactions in astrophysics: a review of useful probes for extracting reaction rates*, F.M. Nunes, G. Potel, T. Poxon-Pearson, J. Cizewski, *Ann. Rev. Nucl. Part. Phys.* 70 (2020) 140
7. *Constraining the neutron star compactness: Extraction of the  $^{23}\text{Al}(p,g)$  reaction rate for the  $rp$ -process*, C. Wolf et al., *Phys. Rev. Lett.* 122, 232701 (2019).
8. *Microscopic optical potentials for Calcium isotopes*, J. Rotureau, P. Danielewicz, G. Hagen, F.M. Nunes and T. Papenbrook, *Phys. Rev. C* 98, 044628 (2018)
9. *Deuteron-alpha scattering :separable versus non-separable Faddeev approach*, L. Hlophe, Jin Lei, Ch. Elster, A. Nogga, F. M. Nunes, D. Jurcuikonis and A. Deltuva, *Phys. Rev. C* 100, 034609 (2019).
10. *Transfer reaction code with nonlocal interactions*, L.J. Titus, A. Ross and F.M. Nunes, *Comp. Phys. Comm.* 207, 499 (2016).
11. *Low temperature triple-alpha rate in a full three-body model*, N.B. Nguyen, F.M. Nunes, I.J. Thompson and E.F. Brown; *Phys. Rev. Lett.* 109, 141101 (2012).
12. *One-neutron halo structure by the ratio method*, P.C. Capel, R.C. Johnson and F.M. Nunes, *Phys. Lett. B* 705, 112 (2012).
13. *Adiabatic approximation versus exact Faddeev method for  $(d,p)$  and  $(p,d)$  reactions*, F. M. Nunes and A. Deltuva; *Phys. Rev. C* 84, 034607 (2011).

Synergistic Activities (selected)

National Boards and Committees: FRIB Theory Alliance managing director (2015-); DOE Committee of Visitors (chair 2020); DNP Nominating committee (2021-2023); DNP harassment prevention committee (chair 2016-2020, co-chair 2021-); DNP Feshbach award committee (2018-2020); DNP Fellowship Committee (2017-2019); Long Range Plan writing group (2014-2015); Nuclear Science Advisory Committee (2014-2017); DNP executive committee (2014-2016); DNP fellowship committee (2017); Training in Advanced Low Energy Nuclear Theory (TALENT) Board member (2015-2021); FRIB users executive committee (2014-2017); FRIB-theory executive committee (2010-2014); FUSTIPEN Board member (2013-); INT National advisory committee (2010-2012).

Organize schools/workshops: *FRIB Theory Alliance Inaugural Meeting* (MSU, March/April 2015), *TALENT course, theory for exploring nuclear reaction experiments*, GANIL, July 2013; *Reactions and nuclear properties* (ECT\*, Italy 2010); *Interfacing structure and reactions at the centre of the atom* (Queenstown, New Zealand, November 2008); *Women and minorities in science lecture series* at the NSCL (2007-2009); *Direct reactions for exotic beams*, (East Lansing, July 2005).

Service to the scientific community: review panels for NSF and DOE; associate editor for *Phys. Rev. Lett.* (2007-2010) and *Europhys. J. A* (2013- ); grant reviewer for NSF, DOE, STFC(UK), and NSERC (Canada), peer reviewer for *Phys. Rev.*, *Nucl. Phys.*, *Europhys.* and *J. Phys.*; assisting with *Fresco* (general reaction code) and *FaCE* (three body Faddeev with core excitation code) that are available for download on the web.