MARCO T. PIGNI

Oak Ridge National Laboratory
Nuclear Data & Criticality Safety
P.O. Box 2008 MS6170
Oak Ridge, TN 37831-6170
Phone: (865) 576.3357
Fax: (865) 574.3527
Mobile: (631) 662.4968
pignimt@ornl.gov

Education

Atominstitut of the Austrian Universities, Vienna University of Technology
Ph.D. in Nuclear Physics[1] (Nov 2006)
Dissertation Title: "Reliability of optical potentials for nuclear data evaluation."

Università degli Studi di Milano
Dottore Magistrale in Physics[2] (Oct 2002)
Thesis Title: "Emissions of intermediate mass fragments in the interaction of ^{16}O with ^{59}Co and ^{93}Nb."

Research Activities

Oak Ridge National Laboratory,
Nuclear Data & Criticality Safety, Research & Development Staff Member (Apr 2011)

Brookhaven National Laboratory,
National Nuclear Data Center, Assistant Nuclear Physicist (Jan 2010-Apr 2011)

Brookhaven National Laboratory,
National Nuclear Data Center, Post-doctoral Research Associate (Jan 2007-Dec 2009)

Publications

- F. Belloni, M. Calviani, N. Colonna, et al., "Measurement of the neutron-induced fission cross-section of ^{241}Am at the time-of-flight facility nTOF," *Eur. Phys. J.* A**49**, 2 (2013).
- F. Gunsing, E. Berthoumieux, G. Aerts, et al., "Measurement of resolved resonances of ^{232}Th(n,γ) at the nTOF facility at CERN," *Phys. Rev.* C**85**, 064601 (2012).
- C. Guerrero D. Cano-Ott, E. Mendoza, et al., "Measurement and resonance analysis of the ^{237}Np neutron capture cross section," *Phys. Rev.* C**85**, 044616 (2012).
- C. Massimi, P. Koehler, S. Bisterzo, et al., "Resonance neutron-capture cross sections of stable magnesium isotopes and their astrophysical implications," *Phys. Rev.* C**85**, 044615 (2012).

[1] Research group of Ao.Univ.Prof. Dipl.-Ing. Dr. techn. H. Leeb.
[2] Research group of Prof. E. Gadioli.

- M. Calviani, M. H. Meaze, N. Colonna, et al., "Neutron-induced fission cross section of ^{245}Cm: New results from data taken at the time-of-flight facility nTOF," *Phys. Rev.* C**85**, 034616 (2012).

- S. Hoblit, Y. -S. Cho, M. Herman, et al., "Neutron Cross Section Covariances for Structural Materials and Fission Products," *Nuclear Data Sheets* **112**, 3075 (2011).

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- D. Tarrío, L. Tassan-Got, L. Audouin, et al., "Neutron-induced fission cross section of ^{nat}Pb and ^{209}Bi from threshold to 1 GeV: An improved parametrization," *Phys. Rev.* C**83**, 044620 (2011).

- C. Lederer, N. Colonna, C. Domingo-Pardo, et al., "^{197}Au(n,γ) cross section in the unresolved resonance region," *Phys. Rev.* C**83**, 034608 (2011).

- M. T. Pigni, M. Herman, P. Obložinský, et al., "Sensitivity analysis of neutron total and absorption cross sections within the optical model," *Phys. Rev.* C**83**, 024601 (2011).

- F. Belloni, M. Calviani, N. Colonna, et al., "Neutron-induced fission cross-section of ^{233}U in the energy range $0.5 < E_n < 20$ MeV," *Eur. Phys. J.* A**47**, 2 (2011).

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- C. Guerrero, U. Abbondanno, et al., "The nTOF Total Absorption Calorimeter for neutron capture measurements at CERN," *Nucl. Inst. Meth. In Phys. Res.* A**608**, 424 (2009).
- M. T. Pigni, M. Herman, and P. Obložinský, "Extensive set of cross section covariance estimates in the fast neutron energy region," *Nucl. Sci. Eng.* **162**, 25 (2009).
- C. Domingo-Pardo, U. Abbondanno, G. Aerts, et al., "The measurement of the ^{206}Pb(n,γ) cross section and stellar implications," *J. Phys. G: Nucl. Phys.* **35**, 014020 (2008).
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- R. C. Little, T. Kawano, G. D. Hale et al., "Low-fidelity Covariance Project," *Nuclear Data Sheets* **109**, 2828 (2008).
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- G. Tagliente, K. Fujii, P. M. Milazzo, et al., "Neutron capture cross section of 90Zr: Bottleneck in the s-reaction flow," *Phys. Rev.* C**77**, 035802 (2008).
- M. T. Pigni, M. Herman, P. Obložinský, "Estimated ^{55}Mn and ^{90}Zr cross section covariances in the fast neutron energy region," *Nuclear Data Sheets* **109**, 2900 (2008).
- F. Gunsing, U. Abbondanno, G. Aerts, et al., "Status and outlook of the neutron time-of-flight facility nTOF at CERN," *Nucl. Inst. Meth. In Phys. Res.* B**261**, 925 (2007).
- G. Aerts, U. Abbondanno, H. Alvarez, et al., "Neutron capture cross section of ^{232}Th measured at the nTOF facility at CERN in the unresolved resonance region up to 1 MeV," *Phys. Rev.* C**73**, 054610 (2006).
- S. Marrone, U. Abbondanno, G. Aerts, et al., "Measurement of the ^{151}Sm(n,γ) cross section from 0.6 eV to 1 MeV via the neutron time-of- flight technique at the CERN nTOF facility," *Phys. Rev.* C**73**, 034604 (2006).

- H. Leeb, E. Jericha, J. Kasper, et al., "Unique reconstruction of depth profiles in neutron specular reflectometry: practical aspects," *Physica* B**356**, 41 (2005).

- E. Gadioli, G. F. Steyn, F. Albertini, et al., "Emission of intermediate- mass fragments in the interaction of ^{16}O with ^{59}Co, ^{93}Nb and ^{197}Au," *Eur. Phys. J.* A**17**, 195 (2003).

Conference Proceedings

- T. M. Shneidman, A. V. Andreev, M. T. Pigni, et al., "Collective spectra along the fission barrier," NSRT12 - International Conference on Nuclear Structure and Related Topics, Dubna, Russia, July 3-7, 2012, EPJ Web of Conferences Vol. 38 (2012).

- M. T. Pigni, M. E. Dunn, and K. H. Guber, "^{183}W Resonance Parameter Evaluation in the Neutron Energy Range Up to 5 keV," PHYSOR 2012 - Advances in Reactor Physics - Linking Research, Industry, and Education, Knoxville, Tenn., April 15-20, 2012, on CD-ROM, American Nuclear Society, LaGrange Park, IL (2012).

- G. Palmiotti, M. Salvatores, H. Hiruta, et al., "Use of covariance matrices in a consistent (multiscale) data assimilation for improvement of basic nuclear parameters in nuclear reactor applications: from meters to femtometers," International Conference on Nuclear Data for Science and Technology, Jeju Island, korea, April 26-30, 2010.

- M. Herman, M. T. Pigni, F. S. Dietrich, et al., "Optical Model and Cross Section Uncertainties," CNR*09 - Second International Workshop on Compound Nuclear Reactions and Related Topics, Bordeaux, France, October 5-8, 2009.

- M. T. Pigni, M. Herman, C. M. Mattoon, et al., "Evaluation of ^{23}Na Cross Sections for Nuclear Data Assimilation," Wonder 2009 - 2nd International Workshop On Nuclear Data Evaluation for Reactor application, CEA Cadarache Château, France, September 29 - October 2, 2009.

- M. T. Pigni, M. Herman, and P. Obložinský, "Extensive set of low-fidelity cross section covariances in fast neutron region," International Conference on the Physics of Reactors ⟨⟨Nuclear Power: A sustainable Resource⟩⟩, Interlaken, Switzerland, September 14-19, 2008.

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- M. Herman, S. F. Mughabghab, P. Obložinský, et al., "EMPIRE ultimate expansion: resonances and covariances," International Conference on Nuclear Data for Science & Technology, Nice, France, April 22-27, 2007.

- D. Rochman, M. Herman, P. Obložinský, et al., "Neutron cross section covariances from thermal energy to 20 MeV," International Conference on Nuclear Data for Science & Technology, Nice, France, April 22-27, 2007.
- H. Leeb, M. T. Pigni, and I. Raškinytė, "Covariances for evaluations based on extensive modeling," International Conference on NUCLEAR DATA for Science & Technology, Santa Fe, NM, September 28 - October 1, 2004, p. 161.
- M. T. Pigni and H. Leeb, "Uncertainty estimates of evaluated 56Fe cross sections based on extensive modeling at energies beyond 20 MeV," Proceedings of the International Workshop on Nuclear Data for the Transmutation of Nuclear Waste, GSI-Darmstadt, September 1-5, 2003.
- E. Gadioli, G. F. Steyn, C. Birattari, et al., "Emission of Boron Fragments in Reactions Induced by ^{16}O up to 25 MeV/amu," Nuclear Theory'21, ed. V. Nikolaev, Heron Press, Sofia (2002) p. 223.

Reports

- P. Obložinský, C. M. Mattoon, M. Herman et al., "Progress on Nuclear Data Covariances: AFCI-1.2 Covariance Library," Internal Report BNL- 90897-2009.
- M. T. Pigni, F. S. Dietrich, M. Herman et al., "Can cross sections be accurately known a priori?," Internal Report BNL-81627-2008-CP.
- M. Herman, S. F. Mughabghab, P. Obložinský, et al., "Neutron cross section covariances in the resolved resonance region," Internal report BNL-80173-2008. April 2008.
- H. Leeb and M. T. Pigni, "Theoretical calculations of covariances for reactions on Lithium isotopes," Internal Report ATI-NDC-2006-01. January 2006.
- H. Leeb, K. Nikolics, and M. T. Pigni, "Theoretical calculations of covariances for reactions on Oxygen isotopes," Internal Report TTMN- 2006-139. February 2006.
- M. T. Pigni and H. Leeb, "Prior covariances with Talys for ^{208}Pb," Internal Report EFF-DOC-980. May 2006.
- M. T. Pigni and H. Leeb, "Covariance analysis of the ^{232}Th(n,γ) measurements at the nTOF facility at CERN," Internal Report ATI-NDC- 2004-03. March 2004.
- M. T. Pigni and H. Leeb, "Covariance analysis of the ^{151}Sm(n,γ) measurements at the nTOF facility at CERN," Internal Report ATI-NDC- 2004-02. February 2004.
- M. T. Pigni and H. Leeb, "Covariances for nuclear data evaluations strongly relying on modeling," Internal Report EFF-DOC-888.

Languages

Italian (native speaker),
English (full professional proficiency),
German (elementary proficiency).

Military Service

Artillery, Italian Army, "Reggimento Artiglieria a Cavallo" (2001).

Personal Interests

Sport:
- Track and Cycling (competitive)
- Swimming (amateur)

Music:
- Violin

Professional Membership

American Nuclear Society (ANS) and American Physical Society (APS).

Notes

Green Card holder.