

# REMCO G. T. ZEGERS

**EDUCATION** 1999 - Ph.D. with Distinction (Cum Laude) in Mathematics and Physics, Experimental Nuclear Physics – Kernfysisch Versneller Instituut (KVI), University of Groningen, The Netherlands  
1995 – Master in Technical Physics, Materials Science – University of Groningen, The Netherlands

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**CURRENT AFFILIATIONS** Department of Physics and Astronomy, Michigan State University (MSU)  
Facility for Rare Isotope Beams (FRIB), Michigan State University  
National Superconducting Cyclotron Laboratory (NSCL), Michigan State University  
Joint Institute for Nuclear Astrophysics-Center for the Evolution of the Elements, Michigan State University

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**PROFESSIONAL EXPERIENCE** 2020- Associate Chairperson for Graduate Programs/Graduate Program Director, Dept. of Physics and Astronomy, MSU  
2018- Scientific Spokesperson FRIB High Rigidity Spectrometer  
2014-2015 Committee on Institutional Cooperation Academic Leadership Fellow, MSU  
2013-2018 MSU Faculty Excellence Advocate, FRIB/NSCL  
2013-2015 Associate Director for Education, FRIB/NSCL  
2013-Professor, FRIB/NSCL, Dept. Physics & Astronomy, MSU  
2012-2019 Associate Director for Experimental Research, NSCL  
2009-2012 Associate Professor, NSCL, Dept. Physics & Astronomy, MSU  
2003-2009 Assistant Professor, NSCL, Dept. Physics & Astronomy, MSU  
2001-2003 Visiting Scientist, Research Center for Nuclear Physics (RCNP), Osaka, Japan stationed at the Laser Electron Photon Spectrometry group (LEPS) group at Spring-8  
1999-2001 Science and Technology Agency (STA) of Japan Fellow, hosted by the Japan Atomic Energy Research Institute (JAERI), stationed at the Laser Electron Photon Spectrometry Group (LEPS) at Spring-8

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**RESEARCH INTERESTS** Experimental nuclear physics with applications in astrophysics and neutrino physics; (p,n), (d,<sup>2</sup>He) and (<sup>7</sup>Li,<sup>7</sup>Be) charge-exchange reactions in inverse kinematics with rare isotope beams/(t,<sup>3</sup>He), (<sup>3</sup>He,t), (<sup>10</sup>Be,<sup>10</sup>B), (<sup>6</sup>Li,<sup>6</sup>Li') reaction studies on stable nuclei: nuclear structure studies, weak rates for astrophysics, (neutrinoless) double β-decay, isovector giant resonances

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**TECHNOLOGY SPECIALTIES** Magnetic spectrometers/neutron detectors/γ-detectors/charged-particle detectors for rare-isotope beam experiments, Liquid Hydrogen Target, Helium Jet Ion Source, High Rigidity Spectrometer

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<b>AWARDS &amp; HONORS</b>	<p>2020 American Physical Society Outstanding Referee</p> <p>2019 Fellow of the American Association for the Advancement of Science</p> <p>2018 FAIR/GSI Exotic Nuclei Community (GENCO) Membership Award</p> <p>2017 Fellow of the American Physical Society</p> <p>2007 Outreach award, Dept. of Physics and Astronomy, Michigan State University</p> <p>2006 Outstanding non-tenured teaching award, Dept. of Physics and Astronomy, Michigan State University</p>
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<b>PROFESSIONAL ORGANIZATIONS</b>	<p>American Physical Society (APS) - Division of Nuclear Physics (DNP)</p> <p>American Association for the Advancement of Science (AAAS)</p> <p>National Society of Black Physicists (NSBP)</p>
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<b>SERVICE HIGHLIGHTS</b>	<p>2020 Nuclear Science Summer School (NS<sup>3</sup>) (Chair)</p> <p>2020 APS Freedman Award Committee (Vice Chair)</p> <p>2017-2019 APS DNP Education Committee</p> <p>2017-2019 APS DNP Executive Committee</p> <p>2015-2018 APS Physical Review C Editorial Board</p> <p>2016-2018 MSU University Council and Faculty Senate</p> <p>2010-2013 Board of Directors Exotic Beam Summer School (EBSS), Organizer 2011</p> <p>2015- APS National Mentoring Community Mentor</p> <p>2013-2020 Secretary for the Nuclear Physics Group in the MSU Dept. of Physics and Astronomy</p> <p>2009- FRIB Working Group - High Rigidity Spectrometer – Point of Contact 2009-</p> <p>2009-2015 FRIB Working Group - Neutron Detectors – Point of Contact</p> <p>2015 US-China-Rare Isotope Beam Task Force – Member</p> <p>2014-2015 Rare Isotope at your Fingertips, a mobile game about rare isotopes, supported by an APS “Physics on the Road” Grant</p> <p>2005-2008 Research Center for Nuclear Physics Program Advisory Committee</p> <p>2005,2006 Lead Organizer NSCL Open Houses</p> <p>2004, 2006-2009 Organizer of Physics of Atomic Nuclei, Summer program for middle and high school students and teachers</p> <p>2005 “Schrödinger’s Mousetrap”-World year of Physics activity in Nature. Wrote Episode 5, Nature 433, 689</p> <p>Conference &amp; Workshop Organization with a leading role:</p> <p style="padding-left: 20px;">2017 High Rigidity Spectrometer Workshop – August 2 (Chair)</p> <p style="padding-left: 20px;">2014 Workshop on A High Rigidity Spectrometer for FRIB (Chair)</p> <p style="padding-left: 20px;">2011 APS DNP Meeting</p> <p style="padding-left: 20px;">2011 Workshop on High Rigidity Spectrometer for FRIB (Co-Chair)</p> <p style="padding-left: 20px;">2009 Third International Conference on Collective Motion in Nuclei under Extreme Conditions (COMEX3) (Chair)</p> <p style="padding-left: 20px;">2008 10<sup>th</sup> International Conference on Nuclei in the Cosmos</p>
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2004 JINA workshop on Charge-Exchange Reactions (Chair)

Journal Referee: Nature, Physical Review Letters, Physical Review C (Member Editorial Board 2015-2018), Nuclear Instruments and Methods A&B, Physics Letters B, Nuclear Physics A, Progress of Theoretical and Experimental Physics, Modern Physics Letters A, Astrophysics and Space Science

Grant/Program Review: Department of Energy, Office of Science, Nuclear Physics; National Science Foundation; Natural Sciences and Engineering Research Council of Canada, European Research Council, Deutsche Forschungsgemeinschaft

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**GRANT SUPPORT  
(SUMMARY)**

- Center for Nuclear Astrophysics Across Messengers (CeNAM), 09/2022-08/2025, DOE-SC
- Organic Glass Scintillators for Nuclear Physics Experiments (SBIR Phase II), 04/2022-04/2024
- Improving and Sustaining Diversity, Equity, and Inclusion in the Physics Ph.D. Program - Creating Inclusive Excellence Grant (CIEG) at MSU, 01/2022-12/2022
- Windows on the Universe: Nuclear Astrophysics at the Facility for Rare Isotope Beams, 8/1/2022-7/30/2025, NSF
- REU Site: Research Experiences for Undergraduates in Physics, 6/2021-5/2024, NSF
- Institute for Nuclear Science to Inspire the next Generation of a Highly Trained workforce (INSIGHT), 07/2021-07/2023, DOE-SC
- MRI: Energy Loss Optical Scintillation System (ELOSS) for heavy-ion particle identification (PID) by energy-loss measurement ( $\Delta E$ ), 9/1/2020-8/30/2023, NSF
- Windows on the Universe: Nuclear Astrophysics at the National Superconducting Cyclotron Laboratory (NSCL); 8/1/2019-7/30/2022, NSF
- High Rigidity Spectrometer Project – FY20-FY22, 03/2018-01/2023, DOE-SC
- AccelNet-WOU: International Research Network for Nuclear Astrophysics (IReNA), 10/1/2019 – 9/30/2024, NSF
- Ion-Optical and Associated Magnet Feasibility Study of a High Rigidity Spectrometer (Supplement); 9/1/2017-8/31/2018, DOE-SC
- Ion-Optical and Associated Magnet Feasibility Study of a High Rigidity Spectrometer; 9/1/2017-8/31/2018; DOE-SC
- Enhancing diversity in undergraduate research in NSCL -Creating Inclusive Excellence Grant (CIEG) at MSU; 1/10/2017-1/10/2018
- Ion-Optical and Associated Magnet Feasibility Study of a High Rigidity Spectrometer; 9/1/2016-8/31/2017, DOE-SC
- Operation of the NSCL as a National User Facility & Research Program; 10/16-09/21; NSF
- Ion-Optical and Associated Magnet Feasibility Study of a High Rigidity Spectrometer; 9/1/2015-8/31/2016, DOE-SC
- MRI: Development of a helium-jet ion-guide system for harvesting rare isotopes and commensal operation at NSCL; 9/1/2015-8/30/2020; NSF
- Solid State Neutron Detectors with Integrated Electronics for Nuclear Physics (Subaward from RMD Inc.); 4/1/2015-3/31/2016; DOE-SBIR (C15-25)
- JINA-Center for the Evolution of the Elements; 9/1/2014 - 8/31/2020; NSF
- Rare Isotopes at your Fingertips: APS “Physics on the Road” Grant; 7/10/2014 - 9/30/2015; APS

- Operation of the NSCL as a National User Facility & Research Program; 10/11-09/16, NSF
- MRI: Development of a Liquid Hydrogen Target for Use with Rare Isotope Beams (subaward from Ursinus College); 2/1/2010 - 8/31/2011, NSF
- 9th,10th,11th,12th Exotic Beam Summerschool (4 separate grants); NSF
- Title: Operation of the NSCL as a National User Facility & Research Program; 10/1/2006 - 9/30/2011, NSF

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**LANGUAGES** Dutch, English (fluent)  
German (good)  
French, Japanese (limited)

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## Remco G. T. Zegers

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### Finite-temperature electron-capture rates for neutron-rich nuclei near N=50 and effects on core-collapse supernova simulations

Authors (10): Giraud, S.; Zegers, R. G. T. ... Paar, N.

Published: May 2022 in Physical Review C

DOI: 10.1103/PHYSREVC.105.055801

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### Search for in-band transitions in the candidate superdeformed band in Si-28

Authors (42): Morris, L.; Jenkins, D. G. ... Zhu, S.

Published: Nov 2021 in Physical Review C

DOI: 10.1103/PHYSREVC.104.054323

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### In-beam gamma-ray spectroscopy of Fe-68 from charge exchange on Co-68 projectiles

Authors (13): Gade, A.; Janssens, R. V. F. ... Weisshaar, D.

Published: Aug 2021 in Physical Review C

DOI: 10.1103/PHYSREVC.104.024313

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### Investigation of the isoscalar response of Mg-24 to Li-6 scattering

Authors (39): Zamora, J. C.; Sullivan, C. ... Zhu, S.

Published: Jul 2021 in Physical Review C

DOI: 10.1103/PHYSREVC.104.014607

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### Electron capture in stars

Authors (3): Langanke, K.; Martinez-Pinedo, G.; Zegers, R. G. T.

Published: Jun 2021 in Reports on Progress in Physics

DOI: 10.1088/1361-6633/ABF207

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### The structure of low-lying 1(-) states in Zr-90,Zr-94 from (alpha, alpha 'gamma) and (p, p 'gamma) reactions

Authors (57): Crespi, F. C. L.; Bracco, A. ... Zilges, A.

Published: May 2021 in Physics Letters B

DOI: 10.1016/J.PHYSLETB.2021.136210

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### New Fe-59 Stellar Decay Rate with Implications for the Fe-60 Radioactivity in Massive Stars

Authors (38): Gao, B.; Giraud, S. ... Weisshaar, D.

Published: Apr 2021 in Physical Review Letters

DOI: 10.1103/PHYSREVLETT.126.152701

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## Proton inelastic scattering in Ni-68,Ni-70,Ni-72 isotopes

Authors (24): Scomparin, L.; Marchi, T. ... Zegers, R.

Published: Mar 2021 in *Il Nuovo Cimento C*

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## Exploiting Isospin Symmetry to Study the Role of Isomers in Stellar Environments

Authors (24): Hallam, S.; Lotay, G. ... Zegers, R. G. T.

Published: Jan 2021 in *Physical Review Letters*

DOI: 10.1103/PHYSREVLETT.126.042701

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## A technique for the study of (p,n) reactions with unstable isotopes at energies relevant to astrophysics

Authors (23): Gastis, P.; Perdikakis, G. ... Zegers, R. G. T.

Published: Jan 2021 in *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*

DOI: 10.1016/J.NIMA.2020.164603

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## RF deflecting cavity for fast radioactive ion beams

Authors (10): Kutsaev, S. V.; Plastun, A. S. ... Zegers, R. G. T.

Published: Dec 2020 in *Epj Techniques and Instrumentation*

DOI: 10.1140/EPJTI/S40485-020-00056-1

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## White paper: from bound states to the continuum

Authors (37): Johnson, Calvin W.; Launey, Kristina D. ... Zhang, Xilin

Published: Dec 2020 in *Journal of Physics G: Nuclear and Particle Physics*

DOI: 10.1088/1361-6471/ABB129

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## Reexamination of isoscalar giant resonances in C-12 and Nb-93 through Li-6 scattering

Authors (40): Zamora, J. C.; Sullivan, C. ... Zhu, S.

Published: Jun 2020 in *Physical Review C*

DOI: 10.1103/PHYSREVC.101.064609

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## Inverse-kinematics proton scattering from S-42,S-44, P-41,P-43, and the collapse of the N = 28 major shell closure (vol 100, 044312, 2019)

Authors (24): Riley, L. A.; Bazin, D. ... Zegers, R. G. T.

Published: May 2020 in *Physical Review C*

DOI: 10.1103/PHYSREVC.101.059902

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## Nuclear mass measurements map the structure of atomic nuclei and accreting neutron stars

Authors (31): Meisel, Z.; George, S. ... Zegers, R. G. T.

Published: May 2020 in *Physical Review C*

DOI: 10.1103/PHYSREVC.101.052801

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## Development of a novel MPGD-based drift chamber for the NSCL/FRIB S800 spectrometer

Authors (7): Cortesi, M.; Pereira, J. ... Zegers, R. G. T.

Published: Mar 2020 in *Journal of Instrumentation*

DOI: 10.1088/1748-0221/15/03/P03025

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## Gamow-Teller strength distributions of Sb-116 and Sb-122 using the (He-3,t) charge-exchange reaction

Authors (29): Douma, C. A.; Agodi, C. ... Zuber, K.

Published: Feb 2020 in The European Physical Journal A

DOI: 10.1140/EPJA/S10050-020-00044-9

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## Next-generation experiments with the Active Target Time Projection Chamber (AT-TPC)

Authors (17): Ayyad, Y.; Abgrall, N. ... Zegers, R. G. T.

Published: Feb 2020 in Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment

DOI: 10.1016/J.NIMA.2018.10.019

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## Gamow-Teller transitions to Zr-93 via the Nb-93(t, He-3 + gamma) reaction at 115 MeV/u and its application to the stellar electron-capture rates

Authors (24): Gao, B.; Zegers, R. G. T. ... Weisshaar, D.

Published: Jan 2020 in Physical Review C

DOI: 10.1103/PHYSREVC.101.014308

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## Ion-optical design of the high-rigidity spectrometer for FRIB

Authors (3): Berg, G. P. A.; Noji, Shumpei; Zegers, Remco G. T.

Published: Dec 2019 in International Journal of Modern Physics A

DOI: 10.1142/S0217751X1942017X

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## Constraints for stellar electron-capture rates on Kr-86 via the Kr-86(t, He-3 + gamma)Br-86 reaction and the implications for core-collapse supernovae

Authors (23): Titus, E. R.; Ney, E. M. ... Zamora, J. C.

Published: Oct 2019 in Physical Review C

DOI: 10.1103/PHYSREVC.100.045805

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## Inverse-kinematics proton scattering from S-42,S-44, P-41,P-43, and the collapse of the N=28 major shell closure

Authors (24): Riley, L. A.; Bazin, D. ... Zegers, R. G. T.

Published: Oct 2019 in Physical Review C

DOI: 10.1103/PHYSREVC.100.044312

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## Single-particle shell strengths near the doubly magic nucleus Ni-56 and the Ni-56(p,gamma)Cu-57 reaction rate in explosive astrophysical burning

Authors (27): Kahl, D.; Woods, P. J. ... Zegers, R.

Published: Oct 2019 in Physics Letters B

DOI: 10.1016/J.PHYSLETB.2019.134803

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## Experimental study of Gamow-Teller transitions via the high-energy-resolution O-18(He-3, t)F-18 reaction: Identification of the low-energy "super" -Gamow-Teller state

Authors (30): Fujita, H.; Fujita, Y. ... Zenihiro, J.

Published: Sep 2019 in Physical Review C

DOI: 10.1103/PHYSREVC.100.034618

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## Experimental constraint on stellar electron-capture rates from the Sr-88(t, He-3 + gamma)Rb-88 reaction at 115 MeV/u

Authors (25): Zamora, J. C.; Zegers, R. G. T. ... Weisshaar, D.

Published: Sep 2019 in Physical Review C

DOI: 10.1103/PHYSREVC.100.032801

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## Constraining the Neutron Star Compactness: Extraction of the Al-23(p,gamma) Reaction Rate for the rp Process

Authors (36): Wolf, C.; Langer, C. ... Zegers, R. G. T.

Published: 2019 in Physical Review Letters

DOI: 10.1103/PHYSREVLETT.122.232701

---

## Extraction of the Landau-Migdal Parameter from the Gamow-Teller Giant Resonance in Sn-132

Authors (60): Yasuda, J.; Sasano, M. ... Zenihiro, J.

Published: Sep 2018 in Physical Review Letters

DOI: 10.1103/PHYSREVLETT.121.132501

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## The (Li-6,Li-6\*[3.56 MeV]) reaction at 100 MeV/u as a probe of Gamow-Teller transition strengths in the inelastic scattering channel

Authors (38): Sullivan, C.; Zegers, R. G. T. ... Zhou, X.

Published: Jul 2018 in Physical Review C

DOI: 10.1103/PHYSREVC.98.015804

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## Excitation of the Isovector Spin Monopole Resonance via the Exothermic Zr-90(N-12,C-12) Reaction at 175 MeV/u

Authors (37): Noji, S.; Sakai, H. ... Zegers, R. G. T.

Published: Apr 2018 in Physical Review Letters

DOI: 10.1103/PHYSREVLETT.120.172501

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## Impact of electron-captures on nuclei near N=50 on core-collapse supernovae

Published: 2018 in Journal of Physics G: Nuclear and Particle Physics

DOI: 10.1088/1361-6471/AA98C1

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## Constraining the rp-process by measuring Al-23(d,n)Si-24 with GRETINA and LENDA at NSCL

Authors (32): Wolf, Clemens; Langer, Christoph ... Zegers, Remco G. T.

Published: Dec 2017 in EPJ Web of Conferences

DOI: 10.1051/EPJCONF/201716501055

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## Spectroscopy of Ti-54 and the systematic behavior of low-energy octupole states in Ca and Ti isotopes

Authors (21): Riley, L. A.; Agiorgousis, M. L. ... Zegers, R. G. T.

Published: Dec 2017 in Physical Review C

DOI: 10.1103/PHYSREVC.96.064315

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## Search for excited states in O-25

Authors (15): Jones, M. D.; Fosse, K. ... Zegers, R. G. T.

Published: Nov 2017 in Physical Review C

DOI: 10.1103/PHYSREVC.96.054322

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## Erratum: Neutron-unbound excited states of $^{23}\text{N}$ [Phys. Rev. C 95, 044323 (2017)]

Published: Nov 2017 in Physical Review C

DOI: 10.1103/PHYSREVC.96.059902

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## Isovector excitations in Nb-100 and their decays by neutron emission studied via the Mo-100(t, He-3 + n) reaction at 115 MeV/u

Authors (24): Miki, K.; Zegers, R. G. T. ... Titus, R.

Published: Jun 2017 in Physics Letters B

DOI: 10.1016/J.PHYSLETB.2017.04.004

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## Measurement of key resonance states for the P-30(p, gamma)S-31 reaction rate, and the production of intermediate -mass elements in nova explosions

Authors (31): Kankainen, A.; Woods, P. J. ... Zegers, R.

Published: Jun 2017 in Physics Letters B

DOI: 10.1016/J.PHYSLETB.2017.01.084

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## Low-lying level structure of Cu-56 and its implications for the rp process

Authors (42): Ong, W. -J.; Langer, C. ... Zegers, R. G. T.

Published: May 2017 in Physical Review C

DOI: 10.1103/PHYSREVC.95.055806

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## White paper on nuclear astrophysics and low energy nuclear physics Part 1: Nuclear astrophysics

Authors (43): Arcones, Almudena; Bardayan, Dan W. ... Zingale, Michael

Published: May 2017 in Progress in Particle and Nuclear Physics

DOI: 10.1016/J.PPNP.2016.12.003

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## Observation of the Isovector Giant Monopole Resonance via the Si-28 (Be-10, B-10\* [1.74 MeV]) Reaction at 100 A MeV

Authors (30): Scott, M.; Zegers, R. G. T. ... Weisshaar, D.

Published: Apr 2017 in Physical Review Letters

DOI: 10.1103/PHYSREVLETT.118.172501

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## Neutron-unbound excited states of N 23

Published: Apr 2017 in Physical Review C

DOI: 10.1103/PHYSREVC.95.044323

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## Neutron Detection with Plastic Scintillators Coupled to Solid-state Photomultiplier Detectors

Published: 2017 in Radiation Detectors in Medicine, Industry, and National Security XVIII

DOI: 10.1117/12.2276991

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## High-resolution study of Gamow-Teller transitions in the Ti-48(He-3,t)V-48 reaction

Authors (31): Ganioglu, E.; Fujita, H. ... Zenihiro, J.

Published: Jun 2016 in Physical Review C

DOI: 10.1103/PHYSREVC.93.064326

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## Total absorption spectroscopy of the beta decay of Ga-76

Authors (13): Dombos, A. C.; Fang, D. -L. ... Zegers, R. G. T.

Published: Jun 2016 in Physical Review C

DOI: 10.1103/PHYSREVC.93.064317

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## Interference Effect between phi and Lambda(1520) Production Channels in the gamma p -> K(+)K(-)p Reaction near Threshold

Authors (72): Ryu, S. Y.; Ahn, J. K. ... Zegers, R. G. T.

Published: Jun 2016 in Physical Review Letters

DOI: 10.1103/PHYSREVLETT.116.232001

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## Octupole strength in the neutron-rich calcium isotopes (vol 93, 044327, 2016)

Authors (20): Riley, L. A.; McPherson, D. M. ... Zegers, R. G. T.

Published: Jun 2016 in Physical Review C

DOI: 10.1103/PHYSREVC.93.069902

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## Inverse kinematics (p, n) reactions studies using the WINDS slow neutron detector and the SAMURAI spectrometer

Authors (61): Yasuda, J.; Sasano, M. ... Lee, J. W.

Published: Jun 2016 in Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms

DOI: 10.1016/J.NIMB.2016.02.007

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## Octupole strength in the neutron-rich calcium isotopes

Authors (20): Riley, L. A.; McPherson, D. M. ... Zegers, R. G. T.

Published: Apr 2016 in Physical Review C

DOI: 10.1103/PHYSREVC.93.044327

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## Digital data acquisition for the Low Energy Neutron Detector Array (LENDa)

Authors (10): Lipschutz, S.; Zegers, R. G. T. ... Tompkins, J.

Published: Apr 2016 in Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment

DOI: 10.1016/J.NIMA.2016.01.050

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## Time-of-flight mass measurements of neutron-rich chromium isotopes up to N=40 and implications for the accreted neutron star crust

Authors (32): Meisel, Z.; George, S. ... Zegers, R. G. T.

Published: Mar 2016 in Physical Review C

DOI: 10.1103/PHYSREVC.93.035805

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## Study of Gamow-Teller transitions from Sn-132 via the (p, n) reaction at 220 MeV/u in inverse kinematics

Authors (61): Sasano, M.; Yasuda, J. ... Lee, J. W.

Published: Jan 2016 in EPJ Web of Conferences

DOI: 10.1051/EPJCONF/201610706003

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## Angle-integrated measurements of the Al-26(d, n)Si-27 reaction cross section: a probe of spectroscopic factors and astrophysical resonance strengths

Authors (29): Kankainen, A.; Woods, P. J. ... Zegers, R.

Published: Jan 2016 in The European Physical Journal A

DOI: 10.1140/EPJA/I2016-16006-5

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## THE SENSITIVITY OF CORE-COLLAPSE SUPERNOVAE TO NUCLEAR ELECTRON CAPTURE

Published: 2016 in The Astrophysical Journal

DOI: 10.3847/0004-637X/816/1/44

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## Investigating the Role of nu p-process: Preparations for the Measurement of the Co-56(p,n)Ni-56 Reaction

Authors (17): Gastis, Panagiotis; Perdikakis, George ... Zegers, Remco

Published: 2016 in Proceedings of the International Symposium on Nuclei in the Cosmos (NIC2016)

DOI: 10.7566/JPSCP.14.020511

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## Two-neutron sequential decay of $O\ 24$

Published: Nov 2015 in Physical Review C

DOI: 10.1103/PHYSREVC.92.051306

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## Mass Measurement of Sc-56 Reveals a Small $A=56$ Odd-Even Mass Staggering, Implying a Cooler Accreted Neutron Star Crust

Authors (32): Meisel, Z.; George, S. ... Zegers, R. G. T.

Published: Oct 2015 in Physical Review Letters

DOI: 10.1103/PHYSREVLETT.115.162501

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## Gamow-Teller transitions to Ca-45 via the Sc-45( $t, He-3 + \gamma$ ) reaction at 115 MeV/u and its application to stellar electron-capture rates

Authors (30): Noji, S.; Zegers, R. G. T. ... Wimmer, K.

Published: Aug 2015 in Physical Review C

DOI: 10.1103/PHYSREVC.92.024312

---

## High-resolution study of Gamow-Teller excitations in the Ca-42( $He-3, t$ )Sc-42 reaction and the observation of a "low-energy super-Gamow-Teller state"

Authors (37): Fujita, Y.; Fujita, H. ... Zenihiro, J.

Published: Jun 2015 in Physical Review C

DOI: 10.1103/PHYSREVC.91.064316

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## Mass Measurements Demonstrate a Strong $N=28$ Shell Gap in Argon

Authors (31): Meisel, Z.; George, S. ... Zegers, R. G. T.

Published: Jan 2015 in Physical Review Letters

DOI: 10.1103/PHYSREVLETT.114.022501

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## Novel technique for Constraining r-Process ( $n, \gamma$ ) Reaction Rates

Authors (15): Spyrou, A.; Liddick, S. N. ... Zegers, R. G. T.

Published: Dec 2014 in Physical Review Letters

DOI: 10.1103/PHYSREVLETT.113.232502

---

## Gamow-Teller transition strengths from Fe 56 extracted from the Fe 56 ( $t, He\ 3$ ) reaction

Published: Aug 2014 in Physical Review C

DOI: 10.1103/PHYSREVC.90.025801

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## Inverse-kinematics proton scattering on Ca-50: Determining effective charges using complementary probes

Authors (18): Riley, L. A.; Agiorgousis, M. L. ... Zegers, R. G. T.

Published: Jul 2014 in Physical Review C

DOI: 10.1103/PHYSREVC.90.011305

---

## Determining the rp-Process Flow through Ni-56: Resonances in Cu-57( $p, \gamma$ )Zn-58 Identified with GRETINA

Authors (40): Langer, C.; Montes, F. ... Zegers, R. G. T.

Published: Jul 2014 in Physical Review Letters

DOI: 10.1103/PHYSREVLETT.113.032502

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## $\beta(+)$ Gamow-Teller Transition Strengths from Ti-46 and Stellar Electron-Capture Rates

Authors (30): Noji, S.; Zegers, R. G. T. ... Wimmer, K.

Published: Jun 2014 in Physical Review Letters

DOI: 10.1103/PHYSREVLETT.112.252501

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## Gamow-Teller transitions in the A=40 isoquintet of relevance for neutrino captures in Ar-40

Authors (28): Karakoc, M.; Zegers, R. G. T. ... Zenihiro, J.

Published: Jun 2014 in Physical Review C

DOI: 10.1103/PHYSREVC.89.064313

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## Astrophysical weak-interaction rates for selected A=20 and A=24 nuclei

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