



UK Nuclear Activity

January 2022 Issue 103

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Newsletter archive: <http://npg.dl.ac.uk/OutreachNewsletter/index.html>

Nuclear Physics Public Engagement Website: [NuclearPhysicsForYou](#)

[Nuclear Physics Outreach Poster](#) – order hardcopies from STFC free of charge [here](#)

1. Nuclear Physics Publications for January*

If you are publishing a paper that you think would be of media value please contact [Wendy Ellison](#), STFC Press Officer. She can help with press releases and publicity. If you get in touch with her before publication she can also get material ready in advance for the day of publication.

*Also includes missed publications from previous months

Phys. Rev. Lett. **128**, 042701 (2022) (<https://doi.org/10.1103/PhysRevLett.128.042701>)

Radiative Capture on Nuclear Isomers: Direct Measurement of the $^{26m}\text{Al}(\text{p},\gamma)^{27}\text{Si}$ Reaction

G. Lotay, A. Lennarz, C. Ruiz, C. Akers, A. A. Chen, G. Christian, D. Connolly, B. Davids, T. Davinson, J. Fallis, D. A. Hutcheon, P. Machule, L. Martin, D. J. Mountford, and A. St. J. Murphy
Published 27 January 2022

Phys. Rev. Lett. **128** 022502 (2022) (<https://doi.org/10.1103/PhysRevLett.128.022502>)

Nuclear Charge Radii of the Nickel Isotopes $^{58-68,70}\text{Ni}$

S. Malbrunot-Ettenauer, S. Kaufmann, S. Bacca, C. Barbieri, J. Billowes, M. L. Bissell, K. Blaum, B. Cheal, T. Duguet, R. F. Garcia Ruiz, W. Gins, C. Gorges, G. Hagen, H. Heylen, J. D. Holt, G. R. Jansen, A. Kanellakopoulos, M. Kortelainen, T. Miyagi, P. Navrátil, W. Nazarewicz, R. Neugart, G. Neyens, W. Nörtershäuser, S. J. Novario, T. Papenbrock, T. Ratajczyk, P.-G. Reinhard, L. V. Rodríguez, R. Sánchez, S. Sailer, A. Schwenk, J. Simonis, V. Soma, S. R. Stroberg, L. Wehner, C. Wraith, L. Xie, Z. Y. Xu, X. F. Yang, and D. T. Yordanov
Published 14 January 2022

Phys. Rev. C **105**, 014301 (2022) (<https://doi.org/10.1103/PhysRevC.105.014301>)

$\nu_{13/2}$ structures in ^{155}Sm and ^{159}Gd : Supporting evidence of a Z=60 deformed subshell gap

D. J. Hartley, F. G. Kondev, M. P. Carpenter, R. V. F. Janssens, M. A. Riley, K. Villafana, K. Auranen, A. D. Ayangeakaa, J. S. Baron, A. J. Boston, J. A. Clark, J. P. Greene, J. Heery, C. R. Hoffman, T. Lauritsen, J. Li, D. Little, E. S. Paul, G. Savard, D. Seweryniak, J. Simpson, S. Stolze, G. L. Wilson, J. Wu, and S. Zhu
Published 3 January 2022

Phys. Rev. C **105**, 014323 (2022) (<https://doi.org/10.1103/PhysRevC.105.014323>)

Clarifying the structure of low-lying states in ^{72}Br

J. A. Briz, M. J. G. Borge, B. Rubio, J. Agramunt, A. Algora, A. Y. Deo, M. E. Estévez Aguado, G. Farrelly, L. M. Fraile, W. Gelletly, A. Maira, E. Nácher, A. Perea, Zs. Podolyák, A. Poves, P. Sarriguren, and O. Tengblad
Published 25 January 2022

Phys. Rev. C **105**, 014607 (2022) (<https://doi.org/10.1103/PhysRevC.105.014607>)

Fission of $^{180,182,183}\text{Hg}^*$ and $^{178}\text{Pt}^*$ nuclei at intermediate excitation energies

E. M. Kozulin, G. N. Knyazheva, I. M. Itkis, M. G. Itkis, Y. S. Mukhamejanov, A. A. Bogachev, K. V. Novikov, V. V. Kirakosyan, D. Kumar, T. Banerjee, M. Cheralu, M. Maiti, R. Prajapat, R. Kumar, G. Sarkar, W. H. Trzaska, A. N. Andreyev, I. M. Harca, A. Mitu, and E. Vardaci
Published 6 January 2022

Phys. Rev. C **105**, 014611 (2022) (<https://doi.org/10.1103/PhysRevC.105.014611>)

Isotopic cross sections of fragmentation residues produced by light projectiles on carbon near 400A MeV

J. M. Boillos *et al.* (R3B Collaboration)
Published 14 January 2022

Phys. Rev. C **105**, 014619 (2022) (<https://doi.org/10.1103/PhysRevC.105.014619>)

Theoretical description of fission yields: Toward a fast and efficient global model

Jhilmam Sadhukhan, Samuel A. Giuliani, and Witold Nazarewicz
Published 20 January 2022

Phys. Rev. C **105**, 015201 (2022) (<https://doi.org/10.1103/PhysRevC.105.015201>)

Measurement of charged-pion production in deep-inelastic scattering off nuclei with the CLAS detector

S. Morán *et al.* (CLAS Collaboration)
Published 12 January 2022

Nuclear Instruments and Methods in Physics Research Section A **1027** 166044 (2022)

(<https://doi.org/10.1016/j.nima.2021.166044>)

First experimental measurements with the Segmented Inverted-coaxial GerMANium (SIGMA) detector

F. J. Pearce, L. J. Harkness-Brennan, A. Alharbi, A. J. Boston, O. Griffiths, F. Holloway, D. S. Judson, M. Labiche, P. J. Nolan, R. D. Page, D. C. Radford, E. Rintoul, J. Simpson, C. Unsworth, J. P. Wright
Published 10 January 2022

Universe **8** 4 (2022) (<https://doi.org/10.3390/universe8010004>)

Underground Measurements of Nuclear Reaction Cross-Sections Relevant to AGB Stars

Chemseddine Ananna, Francesco Barile, Axel Boeltzig, Carlo Giulio Bruno, Francesca Cavanna, Giovanni Francesco Ciani, Alessandro Compagnucci, Laszlo Csedreki, Rosanna Depalo, Federico Ferraro, Eliana Masha, Denise Piatti, David Rapagnani and Jakub Skowronski
Published 23 December 2021

2. News to Report

a. Three Minute Wonder Open for Entries!



The Three Minute Wonder is the IOP's UK and Ireland-wide science communication competition, it challenges researchers to explain their work to the public in just three minutes. The competition is designed for early career researchers and/or project team members working on any physics-related problem in academia, business and/or industry. The aim is to bring cutting edge physics-related research to life for the general public. To find out more and enter visit www.iop.org/3MW. Closing date for applications in the South West, South Central and Wales regions is Friday 3rd April, details

closing dates for other regions varies and is detailed on the IOP website.

*Contribution by Chantal Nobs
IOP South Central Branch Committee Chair*

The South West, South Central and Wales heat will take place on Wednesday 13th April at 2pm at the University of Bristol, for other regions this may vary. Contact details for the organisers of each heat can be found online.

3. Outreach Activity

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4. Media Interactions

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