



UK Nuclear Activity

February 2025 Issue 139

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

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

1. Nuclear Physics Publications for February*

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. **134** 052502 (2025) (<https://doi.org/10.1103/PhysRevLett.134.052502>)

Revealing the Nature of yrast States in Neutron-Rich Polonium Isotopes

R. Lică *et al.*

Published 5 February 2025

Phys. Rev. Lett. **134** 052503 (2025) (<https://doi.org/10.1103/PhysRevLett.134.052503>)

Refined Topology of the $N=20$ Island of Inversion with High Precision Mass Measurements of $^{31-33}\text{Na}$ and $^{31-35}\text{Mg}$

E. M. Lykiardopoulou *et al.*

Published 7 February 2025

Phys. Rev. Lett. **134** 062701 (2025) (<https://doi.org/10.1103/PhysRevLett.134.062701>)

Direct Mass Measurements of Neutron-Rich Zinc and Gallium Isotopes: An Investigation of the Formation of the First r -Process Peak

A. Jacobs *et al.*

Published 14 February 2025

Phys. Rev. Lett. **134** 062502 (2025) (<https://doi.org/10.1103/PhysRevLett.134.062502>)

Deformation and Collectivity in Doubly Magic ^{208}Pb

J. Henderson *et al.*

Published 14 February 2025

Phys. Rev. Lett. **134** 072501 (2025) (<https://doi.org/10.1103/PhysRevLett.134.072501>)
First Measurement of the Neutron-Emission Probability with a Surrogate Reaction in Inverse Kinematics at a Heavy-Ion Storage Ring
M. Sguazzin *et al.*
Published 18 February 2025

Phys. Rev. Lett. **134** 082303 (2025) (<https://doi.org/10.1103/PhysRevLett.134.082303>)
Minimizing Selection Bias in Inclusive Jets in Heavy-Ion Collisions with Energy Correlators
C. Andres *et al.*
Published 27 February 2025

Phys. Rev. Lett. **134** 082701 (2025) (<https://doi.org/10.1103/PhysRevLett.134.082701>)
Nuclear Astrophysics in the Storage Ring: Background Suppressed Simultaneous Measurement of (p,γ) and (p,n) Reactions
L. Varga *et al.*
Published 28 February 2025

Phys. Rev. C **111** 024614 (2025) (<https://doi.org/10.1103/PhysRevC.111.024614>)
First simultaneous measurement of the γ -ray and neutron emission probabilities in inverse kinematics at a heavy-ion storage ring
M. Sguazzin *et al.*
Published 18 February 2025
Editor's Suggestion

Phys. Rev. C **111** 024002 (2025) (<https://doi.org/10.1103/PhysRevC.111.024002>)
Solution to the ${}^9\text{B}$ ($1/2^+$) state problem using the R -matrix formalism
A. D. Brooks *et al.*
Published 25 February 2025

Phys. Rev. C **111** 025204 (2025) (<https://doi.org/10.1103/PhysRevC.111.025204>)
Photoproduction of the Σ^+ hyperon using linearly polarized photons with CLAS
L. Clark *et al.*
Published 20 February 2025

Phys. Rev. C **111** 025804 (2025) (<https://doi.org/10.1103/PhysRevC.111.025804>)
Strength measurements of the $E_{\text{R}}^{\text{lab}}=647$ and 1842 keV resonances in the ${}^{40}\text{Ca}(p,\gamma){}^{41}\text{Sc}$ reaction and their relevance in novae nucleosynthesis
R. S. Sidhu *et al.*
Published 13 February 2025

Phys. Rev. C **111** 025805 (2025) (<https://doi.org/10.1103/PhysRevC.111.025805>)
Revision of the CNO cycle: Rate of ${}^{17}\text{O}$ destruction in stars
D. Rapagnani *et al.*
Published 20 February 2025

2. News to Report

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3. Outreach Activity

a. Dr. Jagjit Singh gives Evening Public Talk at the Keele Physics Centre

Dr. Jagjit Singh of the University of Manchester gave an evening public talk at the Keele Physics Centre, University of Keele on “Neutron halos: A quantum tale of fragile nuclear stability”. The talk explored the unique properties of exotic atomic nuclei, particularly those with neutron halos, where loosely bound neutrons form a cloud around a stable core. These unusual structures challenge our understanding of traditional nuclear physics and have implications for astrophysics. The talk was very well received, sparking thoughtful questions from an engaged audience eager to learn more about these fascinating quantum phenomena. The event was organised by the IOP West Midlands Branch, Keele Centre.



Details about the event can be found [here](#).

Contribution from Jagjit Singh, University of Manchester

4. Media Interactions

a. Prof. Paul Stevenson's comments on topological qubits featured in news media

Professor Paul Stevenson (Surrey) commented on work published in Nature by a team from Microsoft documenting their progress towards fabrication of topological qubits. The paper was combined with a press release making strong claims about the implication of the Nature paper. Paul Stevenson's comments were picked up by [BBC News](#), [The Guardian](#) and elsewhere.

Contribution from Paul Stevenson, University of Surrey