



UK Nuclear Activity

April 2025 Issue 141

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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 April*

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

Nature (2025) (<https://doi.org/10.1038/s41586-025-08882-7>)

An asymmetric fission island driven by shell effects in light fragments

P. Morfouace *et al.*

Published 30 April 2025

Nature Physics (2025) (<https://doi.org/10.1038/s41567-025-02885-x>)

Storage-ring laser spectroscopy of accelerator-produced hydrogen-like $^{208}\text{Bi}^{82+}$

M. Horst *et al.*

Published 28 April 2025

Phys. Rev. Lett. **134** 162504 (2025) (<https://doi.org/10.1103/PhysRevLett.134.162504>)

Probing Exotic Cross-Shell Interactions at $N=28$ with Single-Neutron Transfer on ^{47}K

C. J. Paxman *et al.*

Published 25 April 2025

Phys. Rev. Lett. **134** 162301 (2025) (<https://doi.org/10.1103/PhysRevLett.134.162301>)

First Measurement of Hypernuclei and Antihypernuclei at the LHC

S. Acharya *et al.* (ALICE Collaboration)

Published 23 April 2025

Phys. Rev. Lett. **134** 162502 (2025) (<https://doi.org/10.1103/PhysRevLett.134.162502>)

Isospin Symmetry Breaking in the 71Kr and 71Br Mirror System

A. Algora *et al.*

Published 23 April 2025

Phys. Rev. Lett. **134** 153001 (2025) (<https://doi.org/10.1103/PhysRevLett.134.153001>)

Quantum Electrodynamics in Strong Electromagnetic Fields: Substate Resolved $K\alpha$ Transition Energies in Heliumlike Uranium

Ph. Pfafflein *et al.*

Published 14 April 2025

Phys. Rev. Lett. **134** 142701 (2025) (<https://doi.org/10.1103/PhysRevLett.134.142701>)

First Proton-Induced Cross Sections on a Stored Rare Ion Beam: Measurement of $^{118}\text{Te}(p,\gamma)$ for Explosive Nucleosynthesis

S. F. Dellmann *et al.*

Published 9 April 2025

Phys. Rev. Lett. **134** 142301 (2025) (<https://doi.org/10.1103/PhysRevLett.134.142301>)

Observation of $t\bar{t}$ Production in Pb+Pb Collisions at $\sqrt{s_{\text{NN}}}=5.02$ TeV with the ATLAS Detector

G. Aad *et al.* (ATLAS Collaboration)

Published 7 April 2025

Phys. Lett. B **865** (2025) 139466 (<https://doi.org/10.1016/j.physletb.2025.139466>)

First polarisation measurement of coherently photoproduced J/ψ in ultra-peripheral Pb–Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV

S. Acharya *et al.* (ALICE Collaboration)

Published 15 April 2025

Phys. Lett. B **864** (2025) 139409 (<https://doi.org/10.1016/j.physletb.2025.139409>)

Medium-induced modification of groomed and ungroomed jet mass and angularities in Pb-Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV

S. Acharya *et al.* (ALICE Collaboration)

Published 4 April 2025

Phys. Rev. C **111** 044305 (2025) (<https://doi.org/10.1103/PhysRevC.111.044305>)

Lifetime measurements in $^{154,155}\text{Er}$ nuclei and theoretical studies of collective properties in neutron-deficient erbium isotopes

A. Turturica *et al.*

Published 4 April 2025

Phys. Rev. C **111** 044314 (2025) (<https://doi.org/10.1103/PhysRevC.111.044314>)

High-precision mass measurements of the ground and isomeric states in $^{124,125}\text{Ag}$

J. Ruotsalainen *et al.*

Published 16 April 2025

Phys. Rev. C **111** 044609 (2025) (<https://doi.org/10.1103/PhysRevC.111.044609>)

Competition between mass-symmetric and asymmetric fission modes in produced in the reaction

K. Nishio *et al.*

Published 21 April 2025

Phys. Rev. C **111** 044909 (2025) (<https://doi.org/10.1103/PhysRevC.111.044909>)
Search for the jet-induced diffusion wake in the quark-gluon plasma via measurements of jet-track correlations in photon-jet events in Pb+Pb collisions at $\sqrt{s_{NN}}=5.02\text{TeV}$ with the ATLAS detector
G. Aad *et al.* (ATLAS Collaboration)
Published 22 April 2025

The Astrophysical Journal **983** 142 (2025) (<https://doi.org/10.3847/1538-4357/adc253>)
First Measurement of $^{87}\text{Rb}(\alpha, xn)$ Cross Sections at Weak r-process Energies in Supernova V-driven Ejecta to Investigate Elemental Abundances in Low-metallicity Stars
C. Fougères *et al.*
Published 16 April 2025

JCAP **04** (2025) 009 (<https://doi.org/10.1088/1475-7516/2025/04/009>)
Multimuons in cosmic-ray events as seen in ALICE at the LHC
S. Acharya *et al.* (ALICE Collaboration)
Published 2 April 2025

Nucl. Phys. A **1060** 123120 (2025) (<https://doi.org/10.1016/j.nuclphysa.2025.123120>)
First experimental test of the ratio method
S. Ota *et al.*
Published 23 April 2025

2. News to Report

a. Nominations open for new members of the IoP Nuclear Physics Group committee

Nominations are now open to fill upcoming committee vacancies in the Institute of Physics Nuclear Physics Group. There are five vacancies for the present nomination window:

1x Treasurer
4x Ordinary member

Nominations close on the 19th of May. We encourage members from across the Nuclear Physics community to apply.

Details of the nomination procedure can be found here:

<https://www.mi-nomination.com/iop>

Contribution from Jack Henderson, University of Surrey, IoP Nuclear Physics Group Chair

b. IoP Nuclear Physics Conference 2025 - University of Manchester

The annual IOP Nuclear Physics Conference took place at the University of Manchester between 23rd and 25th of April. Over 150 attended the conference with a programme including 19 plenary speakers covering a variety of topics in Nuclear Structure and

Astrophysics, Hadron Physics, Relativistic Heavy Ion Collisions, Applied Nuclear Physics and Nuclear Data and Medical Physics. The speakers included the 2023 and 2024 Ernest Rutherford Medal Winners David Jenkins (University of York) and Alison Bruce (University of Brighton) and the winners of the Nuclear Physics Summer School best talk prizes, Alex Smith (University of York) and Refilwe Setso (University of York). There was a significant contribution to the programme from early-career researchers with 55 talks in parallel sessions from students and PDRAs in addition to 25 posters. Invited speakers judged the posters and prizes were awarded to Michal Włodarczyk (University of Manchester) and Claire Jameson (University of Surrey) who were presented with their prizes at the conference dinner in the Midland Hotel.

The conference also included the annual town meeting where the community had a chance to meet the new Executive Chair of STFC in person. The conference was well supported by STFC and EPJ as well as industrial sponsors from AWE, CAEN, Hilger Crystals, Mirion Technologies, Rapiscan Southern Scientific and Tektronix.

We would like to thank all those that attended and contributed for making it such an

interesting and enjoyable conference and we look forward to seeing everyone for the 2026 conference in Brighton.



Contribution from Tom Day Goodacre, Kara Lynch, David Sharp, Tobias Wright (local organising committee)

c. Early Career Researcher Forum held in Manchester

The University of Manchester hosted the 4th early-career researcher (ECR) forum on the 22nd of April for members of the UK's nuclear physics ECR community. The workshop was a satellite event for the UK IOP Nuclear Physics Conference. It was a well-attended event, with approximately 30 participants joining from across the country. Dr Sarah Ashworth from The University of Manchester Research Development Team gave two insightful workshops on how to write a CV for industry and academic positions, and on writing applications to apply for Fellowships. There were two talks from Philippos Pappadakis and Liam Gaffney describing the proposals that were ranked top in the 2024 UKRI Nuclear Physics Roadmap. The event finished with four talks from members of the ECR community on ideas for future experiments, presented in a proposal defence style. A panel of five judges asked questions and ranked the talks, and awarded a prize of £100 Dr Joseph O'Neill from the University of Surrey. The panel noted the quality of all four talks was very high.

The IoP Nuclear Physics Group and the Nuclear Physics European Collaboration Committee (NuPECC) provided funding support for the Forum. The organisers extend their thanks to the IoP and NuPECC for providing the funding

to allow this event to take place. The success of this event highlights the benefit of a strong ECR collaboration within the UK nuclear physics community.



Contribution from Jacob Heery, University of Surrey

d. First FAUST Science Workshop held in London



The first science workshop for the STFC-funded FAUST project was held at the Institute of Physics building in London on the 14th and 15th of April. The workshop focused on communicating the design status of the project, building the user community and discussing potential research priorities. More than forty people attended from both UK and international institutions. Representatives from UK industry also presented, with discussion from Hilger Crystals on developments in the commercial scintillation detection market, and Micron Semiconductor on recent developments in semiconductor detectors.

Contribution from Jack Henderson, University of Surrey

3. Outreach Activity

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4. Media Interactions

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