



# UK Nuclear Activity

January 2025 Issue 138

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

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

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## 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

Communications Physics **8** 8 (2025) (<https://doi.org/10.1038/s42005-024-01928-8>)

Direct measurement of three different deformations near the ground state in an atomic nucleus

A. Montes Plaza *et al.*

Published 3 January 2025

Phys. Rev. Lett. **134** 022502 (2025) (<https://doi.org/10.1103/PhysRevLett.134.022502>)

First Identification of Excited States in  $^{78}\text{Zr}$  and Implications for Isospin Nonconserving Forces in Nuclei

G. L. Zimba *et al.*

Published 14 January 2025

Phys. Rev. Lett. **134** 022303 (2025) (<https://doi.org/10.1103/PhysRevLett.134.022303>)

Probing Strangeness Hadronization with Event-by-Event Production of Multistrange Hadrons

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

Published 17 January 2025

Phys. Rev. C **111** 014303 (2025) (<https://doi.org/10.1103/PhysRevC.111.014303>)

Natural solution of the low-lying level structure of  $^{114}\text{I}$  from complementary measurements and new interpretation of the high-spin bands

P. M. Jodidar *et al.*

Published 3 January 2025

Phys. Rev. C **111** 014304 (2025) (<https://doi.org/10.1103/PhysRevC.111.014304>)

Direct observation of  $\beta$  and  $\gamma$  decay from a high-spin long-lived isomer in  $^{187}\text{Ta}$

J. L. Chen *et al.*

Published 3 January 2025

Phys. Rev. C **111** 014321 (2025) (<https://doi.org/10.1103/PhysRevC.111.014321>)

Configuration dependent shapes and types of rotations in the  $\gamma$ -soft  $^{136}\text{Pr}$  nucleus revealed by detailed calculations with tilted axis cranking covariant density functional theory

B. F. Lv *et al.*

Published 16 January 2025

Phys. Rev. C **111** 014327 (2025) (<https://doi.org/10.1103/PhysRevC.111.014327>)

Precision mass measurements of  $^{74-76}\text{Sr}$  using the multiple reflection time-of-flight mass spectrometer at TITAN

Z. Hockenbery *et al.*

Published 23 January 2025

Phys. Rev. C **111** 014329 (2025) (<https://doi.org/10.1103/PhysRevC.111.014329>)

Binding energies, charge radii, spins, and moments: Odd-odd Ag isotopes and discovery of a new isomer

B. van den Borne *et al.*

Published 30 January 2025

Phys. Rev. C **111** 015201 (2025) (<https://doi.org/10.1103/PhysRevC.111.015201>)

Investigating  $\Lambda$  baryon production in  $p$ -Pb collisions in jets and the underlying event using angular correlations

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

Published 14 January 2025

Phys. Rev. D **111** 012010 (2025) (<https://doi.org/10.1103/PhysRevD.111.012010>)

Particle production as a function of charged-particle flattenicity in pp collisions at  $\sqrt{s} = 13$  TeV

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

Published 24 January 2025

Eur. Phys. J. C **85** 86 (2025) (<https://doi.org/10.1140/epjc/s10052-024-13531-w>)

Measurement of the production cross section of prompt  $\Xi^0 c$  baryons in  $p$ -Pb collisions at  $\sqrt{s_{NN}} = 5.02$  TeV

ALICE Collaboration., Acharya, S., Adamová, D. *et al.*

Published 27 January 2025

Eur. Phys. J. C **85** 98 (2025) (<https://doi.org/10.1140/epjc/s10052-024-13506-x>)

Measurement of the inclusive isolated-photon production cross section in pp collisions at  $\sqrt{s} = 13$  TeV

ALICE Collaboration., Acharya, S., Adamová, D. *et al.*

Published 28 January 2025

Quantum Mach. Intell. **7** 14 (2025) (<https://doi.org/10.1007/s42484-025-00242-y>)

Exploiting symmetries in nuclear Hamiltonians for ground state preparation

J. Gibbs, Z. Holmes, and P. Stevenson

Published 30 January 2025

## 2. News to Report

### a. Early Career Research Event Held at University of Edinburgh



A workshop was held in Edinburgh on the 16<sup>th</sup> and 17<sup>th</sup> of January for members of the UK's nuclear physics community. The event was organised for and by early career researchers (ECRs), ranging from the start of their postgraduate studies up to the point of holding advanced fellowships. The event was well attended with approximately 50 participants joining from across the country. The focus of the workshop was a scientific nuclear structure and nuclear astrophysics programme, coupled to a session on research skills, such as how to write and develop proposals for experiments at beamtime facilities. Presentations were given by experts in the field and ECRs alike, and a session was dedicated to discussing issues related to EDI within the profession and what ECRs can do to tackle/manage these. Towards the end an open Q&A panel was held where attendees could ask established researchers about their career paths, and how they developed themselves and their ideas.

The success of the event was gauged using an anonymous survey, which indicated that the event was very well received. Constructive feedback for future events include more sessions on research skills, changes to encourage more audience participation, and to ensure diversity of the panel members. The

event was supported by funding from the IoP Nuclear Physics Group, the majority of which was used to support some attendees' travel expenses. Several of these attendees did not have funding to support their studies, so the support provided was critical in allowing their participation in this community event. The organisers extend their thanks to the IoP for providing these students with this opportunity.

*Contribution from the organising committee: Andrew Briscoe (University of Liverpool), Jacob Heery (University of Surrey), Connor O'Shea (University of Surrey), Reuben Russell (University of Surrey), Ragandeep Singh Sidhu (University of Surrey), Alexandra Zadvornaya (University of Edinburgh), Rachel Montgomery (University of Glasgow) and James Cubiss (University of Edinburgh)*

### b. First FAUST Science Workshop - Registration open

Registration is now open for the first scientific workshop of the FAUST project:

<https://indico.stfc.ac.uk/event/1423/>

The workshop will be held at the Institute of Physics building in London (UK), on the 14<sup>th</sup> and 15<sup>th</sup> of April, 2025.

FAUST is a UK, STFC-funded project for a charged-particle detector array to be hosted at FRIB and used alongside the GRETA gamma-ray spectrometer with fast, rare-isotope beams.

The workshop, which is free to attend, will introduce the proposed design and capabilities of the FAUST array, provide an opportunity for discussions of first scientific priorities, and allow for feedback into the design and the staging of the array development.

*Contribution from Jack Henderson (University of Surrey) for the FAUST collaboration*

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## 3. Outreach Activity

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## 4. Media Interactions

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