



# UK Nuclear Activity

April 2024 Issue 129

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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 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.

Phys. Rev. Lett. **132** 162501 (2024) (<https://doi.org/10.1103/PhysRevLett.132.162501>)  
Novel Measurement of the Neutron Magnetic Form Factor from A=3 Mirror Nuclei  
S. N. Santiesteban et al. (Jefferson Lab Hall A Collaboration)  
Published 16 April 2024

Phys. Rev. Lett. **132** 162302 (2024) (<https://doi.org/10.1103/PhysRevLett.132.162302>)  
First Measurement of the  $|t|$  Dependence of Incoherent  $J/\psi$  Photonuclear Production  
S. Acharya et al. (ALICE Collaboration)  
Published 19 April 2024

Phys. Rev. Lett. **132** 172302 (2024) (<https://doi.org/10.1103/PhysRevLett.132.172302>)  
Emergence of Long-Range Angular Correlations in Low-Multiplicity Proton-Proton Collisions  
S. Acharya et al. (ALICE Collaboration)  
Published 26 April 2024

Phys. Lett. B **853** 138654 (2024) (<https://doi.org/10.1016/j.physletb.2024.138654>)  
First investigation on the isomeric ratio in multinucleon transfer reactions: Entrance channel effects on the spin distribution  
D. Kumar *et al.*  
Published 23 April 2024

Phys. Lett. B **853** 138663 (2024) (<https://doi.org/10.1016/j.physletb.2024.138663>)

Long-sought isomer turns out to be the ground state of  $^{76}\text{Cu}$

L. Canete *et al.*

Published 26 April 2024

Phys. Rev. C **109** 044305 (2024) (<https://doi.org/10.1103/PhysRevC.109.044305>)

Neural network emulation of spontaneous fission

Daniel Lay, Eric Flynn, Samuel A. Giuliani, Witold Nazarewicz, and Léo Neufcourt

Published 2 April 2024

Phys. Rev. C **109** 044306 (2024) (<https://doi.org/10.1103/PhysRevC.109.044306>)

Multimodal fission from self-consistent calculations

D. Lay *et al.*

Published 2 April 2024

Phys. Rev. C **109** 044307 (2024) (<https://doi.org/10.1103/PhysRevC.109.044307>)

Analog B(M1) strengths in the  $T_z = \pm 3/2$  mirror nuclei  $^{47}\text{Mn}$  and  $^{47}\text{Ti}$

S. Uthayakumaar *et al.*

Published 4 April 2024

Phys. Rev. C **109** 044309 (2024) (<https://doi.org/10.1103/PhysRevC.109.044309>)

Cluster states and their potential contribution to carbon burning in massive stars

J. Cseh, G. Riczu, and D. G. Jenkins

Published 4 April 2024

Phys. Rev. C **109** 044318 (2024) (<https://doi.org/10.1103/PhysRevC.109.044318>)

Low-lying dipole response of  $^{64}\text{Ni}$

M. Müscher *et al.*

Published 15 April 2024

Phys. Rev. C **109** 044321 (2024) (<https://doi.org/10.1103/PhysRevC.109.044321>)

Odd nuclei and quasiparticle excitations within the Barcelona Catania Paris Madrid energy density functional

S. A. Giuliani and L. M. Robledo

Published 18 April 2024

Phys. Rev. C **109** 044322 (2024) (<https://doi.org/10.1103/PhysRevC.109.044322>)

Quantum simulation approach to implementing nuclear density functional theory via imaginary time evolution

Yang Hong Li, Jim Al-Khalili, and Paul Stevenson

Published 18 April 2024

Phys. Rev. C **109** 044323 (2024) (<https://doi.org/10.1103/PhysRevC.109.044323>)

$^{21}\text{Ne}$  energy levels approaching the  $\alpha$ -particle threshold

C. Angus *et al.*

Published 22 April 2024

Phys. Rev. C **109** 044603 (2024) (<https://doi.org/10.1103/PhysRevC.109.044603>)

Proton and neutron density distributions at supranormal density in low- and medium-energy heavy-ion collisions. II. Central Pb + Pb collisions

J. R. Stone, P. Danielewicz, Y. Iwata

Published 1 April 2024

Phys. Rev. C **109** 044901 (2024) (<https://doi.org/10.1103/PhysRevC.109.044901>)  
Measurement of  $\Xi_c^+$  production in pPb collisions at  $\sqrt{s_{NN}}=8.16$  TeV at LHCb  
R. Aaij et al. (LHCb Collaboration)  
Published 1 April 2024

Phys. Rev. C **109** 044902 (2024) (<https://doi.org/10.1103/PhysRevC.109.044902>)  
 $K^*(892)^\pm$  resonance production in Pb-Pb collisions at  $\sqrt{s_{NN}}=5.02$  TeV  
S. Acharya et al. (ALICE Collaboration)  
Published 3 April 2024

Eur. Phys. J. A **60** 95 (2024) (<https://doi.org/10.1140/epja/s10050-024-01318-2>)  
The first in-beam reaction measurement at CRYRING@ESR using the CARME array  
J. J. Marsh *et al.*  
Published 29 April 2024

\*Also includes missed publications from previous months

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## 2. News to Report

### ***a. IoP Joint APP-HEPP-NP Meeting held in Liverpool***

The joint meeting between astroparticle physics, high-energy particle physics and nuclear physics was held in Liverpool on the 8<sup>th</sup>-11<sup>th</sup> of April. Attendees from around the UK heard about the frontiers of research in the particle physics communities and presented the state-of-the-art in nuclear physics. Nuclear physics posters were exceptionally well presented, with all six of the conference's joint prizes won by students from the community, in addition to two prizes awarded by the IoP Nuclear Physics Group.



The joint prizes winners, sponsored by NuPECC and announced at the conference dinner were, for Monday:

Joint 1st: Asli Acar (University of York)  
Joint 1st: Ben Hogg (University of the West of Scotland)  
3rd: Gee Bartram (University of Surrey)

For Tuesday:

1st: Edward O'Sullivan (University of Surrey)  
2nd: Christopher Cousins (University of Surrey)  
3rd: Jack Hughes (University of Liverpool)

The IoP Nuclear Physics Group prizes went to:  
Greg Willmott (University of Surrey)  
Olivia Tindle (Sheffield Hallam)

The next Nuclear Physics IoP meeting will be held at the University of Manchester, from the 23rd-25th of April, 2025, and the next joint APP-HEPP-NP meeting will be held in 2028, at a location to be decided.

The event was sponsored by Mirion Technologies, the STFC and NuPECC, and the local organising committee from the University of Liverpool was:

Rodi Herzberg  
Ellis Rintoul  
Joost Vosseveld

*Contribution from Jack Henderson (IoP NPG Chair)*

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## 3. Outreach Activity

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#### 4. Media Interactions

