



UK Nuclear Activity

September 2024 Issue 134

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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 September*

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.

Nature Physics (2024) (<https://doi.org/10.1038/s41567-024-02612-y>)

Electromagnetic properties of indium isotopes illuminate the doubly magic character of ^{100}Sn
J. Karthein *et al.*

Published 30 September 2024

Phys. Rev. Lett. **133** 132502 (2024) (<https://doi.org/10.1103/PhysRevLett.133.132502>)

First Detailed Study of the Quantum Decoherence of Entangled Gamma Photons
J. Bordes *et al.*

Published 25 September 2024

Physics Viewpoint: [Positron Emission Tomography Could Be Aided by Entanglement](#)

Phys. Rev. Lett. **133** 132503 (2024) (<https://doi.org/10.1103/PhysRevLett.133.132503>)

High-Precision Mass Measurements of Neutron Deficient Silver Isotopes Probe the Robustness of the $N=50$ Shell Closure
Zhuang Ge *et al.*

Published 26 September 2024

Phys. Lett. B **858** 138943 (2024) (<https://doi.org/10.1016/j.physletb.2024.138943>)

Measurement of (anti)alpha production in central Pb–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV
S. Acharya *et al.* (ALICE Collaboration)

Published 18 September 2024

Phys. Lett. B **858** 139017 (2024) (<https://doi.org/10.1016/j.physletb.2024.139017>)

Measurement of the impact-parameter dependent azimuthal anisotropy in coherent ρ^0 photoproduction in Pb–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV

S. Acharya et al. (ALICE Collaboration)

Published 19 September 2024

Phys. Rev. X **14** 031051 (2024) (<https://doi.org/10.1103/PhysRevX.14.031051>)

Exploring the Strong Interaction of Three-Body Systems at the LHC.

S. Acharya et al. (ALICE Collaboration)

Published 24 September 2024

Phys. Rev. C **110** L031301 (2024) (<https://doi.org/10.1103/PhysRevC.110.L031301>)

Observation and spectroscopy of the proton-unbound nucleus ^{21}Al

D. Kostyleva *et al.*

Published 3 September 2024

Phys. Rev. C **110** 034303 (2024) (<https://doi.org/10.1103/PhysRevC.110.034303>)

Decay of a microsecond seniority 3 isomeric state in ^{155}Hf

B. Alayed *et al.*

Published 3 September 2024

Phys. Rev. C **110** 034311 (2024) (<https://doi.org/10.1103/PhysRevC.110.034311>)

In-beam γ -ray spectroscopy of $^{211,213}\text{Ac}$ and ^{211}Ra

J. Louko *et al.*

Published 11 September 2024

Phys. Rev. C **110** 034313 (2024) (<https://doi.org/10.1103/PhysRevC.110.034313>)

Band terminations and maximum spin values with up to 18 aligned particles (and holes) in the $Z, N=50$ to 82 shells

I. Ragnarsson *et al.*

Published 12 September 2024

Phys. Rev. C **110** 034315 (2024) (<https://doi.org/10.1103/PhysRevC.110.034315>)

Charge radii of thallium isotopes near the $N=126$ shell closure

Z. Yue *et al.* (IDS Collaboration)

Published 13 September 2024

Phys. Rev. C **110** 034319 (2024) (<https://doi.org/10.1103/PhysRevC.110.034319>)

Electric and magnetic dipole strength in ^{58}Ni from forward-angle proton scattering

I. Brandherm *et al.*

Published 17 September 2024

Phys. Rev. C **110** 034326 (2024) (<https://doi.org/10.1103/PhysRevC.110.034326>)

Isomeric states of fission fragments explored via Penning trap mass spectrometry at IGISOL

A. Jaries *et al.*

Published 26 September 2024

Phys. Rev. C **110** 034603 (2024) (<https://doi.org/10.1103/PhysRevC.110.034603>)

Importance of whispering gallery resonances for nuclear scattering from weakly bound or unstable nuclei

A. C. Shotter and A. Di Pietro

Published 5 September 2024

Phys. Rev. C **110** 034614 (2024) (<https://doi.org/10.1103/PhysRevC.110.034614>)

Laser-assisted deuterium-tritium fusion: A quantum dynamical model

N. Thomson *et al.*

Published 19 September 2024

J. High Energ. Phys. **2024** 204 (2024). ([https://doi.org/10.1007/JHEP09\(2024\)204](https://doi.org/10.1007/JHEP09(2024)204))

Investigating strangeness enhancement with multiplicity in pp collisions using angular correlations.

The ALICE collaboration., Acharya, S., Adamová, D. et al.

Published 27 September 2024

J. High Energ. Phys. **2024** 102 (2024). ([https://doi.org/10.1007/JHEP09\(2024\)102](https://doi.org/10.1007/JHEP09(2024)102))

Studying strangeness and baryon production mechanisms through angular correlations between charged Ξ baryons and identified hadrons in pp collisions at $\sqrt{s} = 13$ TeV.

The ALICE collaboration., Acharya, S., Adamová, D. et al.

Published 18 September

Eur. Phys. J. A **60** 175 (2024) (<https://doi.org/10.1140/epja/s10050-024-01389-1>)

Structure and astrophysical role of the neutron-rich $55 \leq Z \leq 92$ isotopes: status and perspectives

G. G. Kiss and Z. Podolyak

Published 5 September 2024

Eur. Phys. J. A **60** 181 (2024) (<https://doi.org/10.1140/epja/s10050-024-01396-2>)

Lifetimes of excited states in ^{16}C as a benchmark for ab initio developments

M. Mathy *et al.*

Published 12 September 2024

Eur. Phys. J. Special Topics (2024) (<https://doi.org/10.1140/epjs/s11734-024-01279-z>)

Investigating the rate of $^{10}\text{Be}(n, \gamma)^{11}\text{Be}$ radiative capture reaction within the FRDWBA framework

M. Dan *et al.*

Published 12 August 2024

*Also includes missed publications from previous months

2. News to Report

a. Prof. Harkness-Brennan awarded EPS Applied Nuclear Physics Prize

Prof. Laura Harkness-Brennan from the University of Liverpool was jointly awarded the 2024 European Physical Society (EPS) nuclear physics division applied-nuclear-physics prize at the applied nuclear physics conference held in Thessaloniki, Greece, 23-27 September. Laura's award was made in "recognition of her outstanding contribution to the application of advanced gamma-ray spectroscopy together with imaging technology and techniques to the areas of nuclear medical imaging, homeland security, nuclear decommissioning and environmental monitoring". The joint awardee is Prof. Alberto Del Guerra from the Department of Physics University of Pisa and INFN Sezione di Pisa, Italy.

The prize has existed since 2004 (although until recently it was named the IBA prize due to its sponsorship by the IBA company) and Laura is the first UK winner. Many congratulations to Laura.



The conference attracted ~150 participants and covered a broad range of topics including

medical physics, ion beam analysis, advances in detector technology and environmental monitoring. UK contributions came from researchers from the Universities of Liverpool, Surrey and the West of Scotland. The call for

hosting the next in this series of EPS conferences will be issued soon.

Contribution from Alison Bruce, University of Brighton

3. Outreach Activity

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4. Media Interactions

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