



UK Nuclear Activity

May 2024 Issue 130

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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 May*

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 222303 (2024) (<https://doi.org/10.1103/PhysRevLett.132.222303>)
Photoproduction of K^+K^- Pairs in Ultraperipheral Collisions
S. Acharya *et al.* (ALICE Collaboration)
Published 31 May 2024

Phys. Rev. Lett. **132** 222501 (2024) (<https://doi.org/10.1103/PhysRevLett.132.222501>)
Excited-State Half-Lives in ^{130}Cd and the Isospin Dependence of Effective Charges
A. Jungclaus *et al.*
Published 29 May 2024

Phys. Rev. Lett. **132** 212301 (2024) (<https://doi.org/10.1103/PhysRevLett.132.212301>)
Medium-Enhanced cc Radiation
M. Attems *et al.*
Published 21 May 2024

Phys. Rev. Lett. **132** 202301 (2024) (<https://doi.org/10.1103/PhysRevLett.132.202301>)
Azimuthal Angle Correlations of Muons Produced via Heavy-Flavor Decays in 5.02 TeV Pb+Pb and pp Collisions with the ATLAS Detector
G. Aad *et al.* (ATLAS Collaboration)
Published 17 May 2024

Phys. Rev. Lett. **132** 182701 (2024) (<https://doi.org/10.1103/PhysRevLett.132.182701>)

Experimental Determination of α Widths of ^{21}Ne Levels in the Region of Astrophysical Interest: New $^{17}\text{O}+\alpha$ Reaction Rates and Impact on the Weak s Process

F. Hammache *et al.*

Published 1 May 2024

Phys. Lett. B **854** 138694 (2024) (<https://doi.org/10.1016/j.physletb.2024.138694>)

Prediction of two-neutron halos in the $N = 28$ isotones ^{40}Mg and ^{39}Na

J. Singh *et al.*

Published 10 May 2024

Phys. Lett. B **854** 138740 (2024) (<https://doi.org/10.1016/j.physletb.2024.138740>)

The rate of the astrophysical $^{48}\text{Cr}(p,\gamma)^{49}\text{Mn}$ reaction and its influence on the potential $A = 48$ waiting point in the rp process

C. O'Shea *et al.*

Published 22 May 2024

Phys. Lett. B **854** 138737 (2024) (<https://doi.org/10.1016/j.physletb.2024.138737>)

Electromagnetic moments of the odd-mass nickel isotopes $^{59-67}\text{Ni}$

P. Muller *et al.*

Published 24 May 2024

Phys. Lett. B **854** 138755 (2024) (<https://doi.org/10.1016/j.physletb.2024.138755>)

Quantum mechanical treatment of nuclear friction in coupled-channels heavy-ion fusion

I. Lee, P. Stevenson and A. Diaz-Torres

Published 29 May 2024

Phys. Rev. C **109** 055201 (2024) (<https://doi.org/10.1103/PhysRevC.109.055201>)

Evaluation of the $E2/M1$ ratio in the $N \rightarrow \Delta(1232)$ transition from the $\gamma p \rightarrow p\pi^0$ reaction

E. Mornacchi *et al.* (A2 Collaboration at MAMI)

Published 6 May 2024

Phys. Rev. C **109** L052201 (2024) (<https://doi.org/10.1103/PhysRevC.109.L052201>)

First measurement of ΛN inelastic scattering with Λ from $e^+e^- \rightarrow J/\psi \rightarrow \Lambda\Lambda$

M. Ablikim *et al.* (BESIII Collaboration)

Published 14 May 2024

Phys. Rev. C **109** 054308 (2024) (<https://doi.org/10.1103/PhysRevC.109.054308>)

Cluster structure of $3\alpha+p$ states in ^{13}N

J. Bishop *et al.*

Published 8 May 2024

Phys. Rev. C **109** 054325 (2024) (<https://doi.org/10.1103/PhysRevC.109.054325>)

Reduction of spectroscopic overlap across the $Z=8$ shell in neutron-rich nuclei

T. Redpath *et al.*

Published 24 May 2024

Phys. Rev. C **109** 054602 (2024) (<https://doi.org/10.1103/PhysRevC.109.054602>)

New insight into knockout reactions from the two-proton halo nucleus ^{17}Ne

F. Wamers *et al.*

Published 3 May 2024

Phys. Rev. C **109** 054908 (2024) (<https://doi.org/10.1103/PhysRevC.109.054908>)

Measurement of forward charged hadron flow harmonics in peripheral PbPb collisions at $\sqrt{s_{NN}}=5.02\text{TeV}$ with the LHCb detector

R. Aaij *et al.* (LHCb Collaboration)

Published 15 May 2024

Comput. Phys. Commun. **301** 109239 (2024) (<https://doi.org/10.1016/j.cpc.2024.109239>)
Sky3d v1.2 update
Abhishek, Paul Stevenson, Yue Shi, Esra Yüksel, Sait Umar
Published 10 May 2024

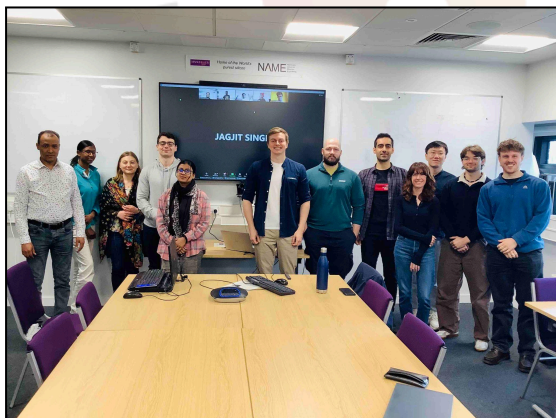
Journal of Fusion Energy **43** 17 (2024) (<https://doi.org/10.1007/s10894-024-00408-9>)
Machine learning based Compton suppression for nuclear fusion plasma diagnostics
K. Lennon, C. Shand, R. Smith
Published 21 May 2024

Phys. Rev. Research **6** L022038 (2024) (<https://doi.org/10.1103/PhysRevResearch.6.L022038>)
Broken seniority symmetry in the semimagic proton mid-shell nucleus ^{95}Rh
B. Das et al.
Published 10 May 2024

2. News to Report

a. Half-day workshop on the analysis of counting data (SATLAS2)

On May 30, 2024, the University of Manchester held a successful hybrid half-day workshop on SATLAS2, a Python package designed for analysing counting data from laser spectroscopy experiments. Bram Van Den Borne from KU Leuven, Belgium, one of the developers of SATLAS2, delivered the seminar and led the hands-on session.



The event attracted 32 participants, split evenly between onsite and offsite attendees

from the UK, Europe, and Asia. They learned about SATLAS2's applications in data analysis and engaged in hands-on sessions to practise fitting laser spectroscopy data and similar datasets using various methods and constraints. The event successfully promoted knowledge transfer and provided valuable training.

The workshop, sponsored by the Photon Science Institute (PSI) at the University of Manchester, was organised by a local committee comprising Jagjit Singh, Jordan Reilly, Kieran T. Flanagan, and Niels R. Walet.

Contribution from Jagjit Singh (on behalf of the organising committee)

3. Outreach Activity

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4. Media Interactions

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