



# UK Nuclear Activity

December 2023 Issue 125

In this issue,

1. [Nuclear Physics Publications for December](#)
2. [News to Report](#)
  - a. [Nuclear Data: A Collective Motion View authored by David Jenkins and John Wood Published](#)
  - b. [IoP Medals and Prizes: Nomination deadline extended](#)
3. [Outreach Activity](#)
  - a. [Early careers: Getting involved](#)
4. [Media Interactions](#)

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 December\*

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. **131** 262501 (2023) (<https://doi.org/10.1103/PhysRevLett.131.262501>)  
High-Precision Spectroscopy of  $^{20}\text{O}$  Benchmarking Ab Initio Calculations in Light Nuclei  
I. Zanon *et al.*  
Published 28 December 2023

Phys. Rev. C **108** L061301 (2023) (<https://doi.org/10.1103/PhysRevC.108.L061301>)  
Probing proton cross-shell excitations through the two-neutron removal from  $^{38}\text{Ca}$   
T. Beck *et al.*  
Published 19 December 2023

Phys. Rev. C **108** 064302 (2023) (<https://doi.org/10.1103/PhysRevC.108.064302>)  
High-precision Penning-trap mass measurements of Cd and In isotopes at JYFLTRAP remove the fluctuations in the two-neutron separation energies  
A. Jaries *et al.*  
Published 4 December 2023

Phys. Rev. C **108** 064304 (2023) (<https://doi.org/10.1103/PhysRevC.108.064304>)  
Exotic decay of  $^{115}\text{Cs}$   
P. Das *et al.*  
Published 5 December 2023

Phys. Rev. C **108** 064307 (2023) (<https://doi.org/10.1103/PhysRevC.108.064307>)

$\beta$ -delayed neutron emissions from N>50 gallium isotopes

R. Yokoyama *et al.*

Published 8 December 2023

Phys. Rev. C **108** 064311 (2023) (<https://doi.org/10.1103/PhysRevC.108.064311>)

Coulomb excitation of  $^{96}\text{Mo}$

R. Russell *et al.*

Published 19 December 2023

Phys. Rev. C **108** 064315 (2023) (<https://doi.org/10.1103/PhysRevC.108.064315>)

Binding energies of ground and isomeric states in neutron-rich ruthenium isotopes: Measurements at JYFLTRAP and comparison to theory

M. Hukkanen *et al.*

Published 26 December 2023

Phys. Rev. C **108** 064602 (2023) (<https://doi.org/10.1103/PhysRevC.108.064602>)

Examination of how properties of a fissioning system impact isomeric yield ratios of the fragments

D. Gjestvang *et al.*

Published 4 December 2023

Eur. Phys. J. A **59** 300 (2023) (<https://doi.org/10.1140/epja/s10050-023-01212-3>)

Lifetime measurement of the yrast  $2^+$  state in  $^{118}\text{Te}$

E. Ahlgren Cederlöf *et al.*

Published 20 December 2023

Eur. Phys. J. A **59** 294 (2023) (<https://doi.org/10.1140/epja/s10050-023-01205-2>)

Kinematics reconstruction in solenoidal spectrometers operated in active target mode

Y. Ayyad *et al.*

13 December 2023

\*Also includes missed publications from previous months

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## 2. News to Report

***a. Nuclear Data: A Collective Motion View authored by David Jenkins and John Wood was published in December 2023.***

This e-book forms part of the IOP Publishing series on Nuclear Spectroscopy and Nuclear Structure. It follows an earlier book entitled Nuclear Data: A Primer which provided an introduction to nuclear structure. The new book goes into more detail on the specific topic of collective motion in nuclei; it is divided into six main chapters that outline the necessary theory and critically review it in the light of available data. Video-based exercises and tutorials are included to promote student learning and understanding. The book follows a

pathway that is very useful to potential readers, particularly PhD students and advanced undergraduate students. The intention is to complement this book with a further work entitled Nuclear Data: An Independent Particle View to be published by mid 2024.

Further details on the contents of Nuclear Data: A Collective Motion View and a free-to-read initial chapter can be accessed [here](#).

*Contribution from David Jenkins, University of York*

### ***b. IoP Medals and Prizes: Nomination deadline extended***

The nomination deadline for the Institute of Physics medals and prizes has been extended to the 29<sup>th</sup> of January, 2024. These awards are intended to recognise exceptional contributions to physics. In nuclear physics, the most relevant award is the Ernest Rutherford

Medal and Prize for distinguished contributions to nuclear physics. If you know of someone who might be suitable for the award, details of the nomination process can be found here: <https://www.iop.org/about/awards>

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

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### **3. Outreach Activity**

#### **a. Early careers: Getting involved**

This month's Early Careers advice is focussed on how to get more involved. Once you've found your feet and started to settle in your role, it is then time to see what extra-curricular opportunities are available to you to help you kickstart your career. A great way to do this is to go to seminars on a topic related to your research/profession, or on a topic you're interested in. The Institute of Physics often advertises seminar opportunities, with a range of in-person and online seminars to suit those in any location. Benefits of in-person seminars are that it is easier to meet other physicists with similar interests and grow your network. Attending seminars can count towards your Continuous Professional Development (CPD), which is any type of learning you undertake which

increases your knowledge, understanding and experiences of a subject area or role.

Other opportunities include becoming a committee member for a Special Interest Group, putting forward your research for an Early Career Researcher Prize etc. If you have the capacity and a manageable workload to seek out opportunities, then these are great ways to get your name out there both internal and external to your organisation.

Show initiative, see what opportunities are out there that interest you, and get involved!

*Contribution from Hannah Gill, Babcock International, IoP Nuclear Physics Group Committee*

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### **4. Media Interactions**

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