UK Nuclear Activity

June 2023 Issue 119

In this issue,

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 June*

Phys. Lett. B 841 137933 (2023) (https://doi.org/10.1016/j.physletb.2023.137933)
Axial and triaxial degrees of freedom in ^{72}Zn
S. Hellgartner *et al.*
Published 10 June 2023

Phys. Rev. C **107** L061301 (2023) (https://doi.org/10.1103/PhysRevC.107.L061301)
Observation of large missing-momentum (e,e′p) cross-section scaling and the onset of correlated-pair dominance in nuclei
I. Korover *et al.* (CLAS Collaboration)
Published 6 June 2023

Phys. Rev. C **107** L062801 (2023) (https://doi.org/10.1103/PhysRevC.107.L062801)
Improved S factor of the ^{12}C(p,γ)^{13}N reaction at E=320–620 keV and the 422 keV resonance
J. Skowronski *et al.*
Published 14 June 2023

Phys. Rev. C **107** 064309 (2023) (https://doi.org/10.1103/PhysRevC.107.064309)
Decay spectroscopy of ^{160}Eu: Quasiparticle configurations of excited states and structure of $K^{\pi}=4^{+}$ bandheads in ^{160}Gd
D. Yates *et al.*
Published 15 June 2023

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Phys. Rev. C 107 064617 (2023) (https://doi.org/10.1103/PhysRevC.107.064617)
Measurement of the $^{14}N(n,p)^{14}C$ cross section at the CERN n_TOF facility from subthermal energy to 800 keV
Pablo Torres-Sánchez *et al.* (The n_TOF Collaboration)
Published 29 June 2023

Phys. Rev. C 107 064901 (2023) (https://doi.org/10.1103/PhysRevC.107.064901)
First measurement of Λ^+_c production down to p_T=0 in pp and p-Pb collisions at $\sqrt{s_{NN}}$=5.02 TeV
S. Acharya *et al.* (ALICE Collaboration)
Published 5 June 2023

Phys. Rev. C 107 064902 (2023) (https://doi.org/10.1103/PhysRevC.107.064902)
Neutron emission in ultraperipheral Pb-Pb collisions at $\sqrt{s_{NN}}$=5.02 TeV
S. Acharya *et al.* (ALICE Collaboration)
Published 5 June 2023

Phys. Rev. C 107 064904 (2023) (https://doi.org/10.1103/PhysRevC.107.064904)
Light (anti)nuclei production in Pb-Pb collisions at $\sqrt{s_{NN}}$=5.02 TeV
S. Acharya *et al.* (ALICE Collaboration)
Published 8 June 2023

Phys. Rev. C 107 065805 (2023) (https://doi.org/10.1103/PhysRevC.107.065805)
Measurement of the $^{77}Se(n,\gamma)$ cross section up to 200 keV at the n_TOF facility at CERN
N. V. Sosnin *et al.* (n_TOF Collaboration)
Published 12 June 2023

Eur. Phys. J. A 59 133 (2023) (https://doi.org/10.1140/epja/s10050-023-01045-0)
AGATA phase 2 advancements in front-end electronics
J. Collado *et al.*
Published 19 June 2023

Proc. R. Soc. A. **479** 20230075 (2023) (https://doi.org/10.1098/rspa.2023.0075)
Enhancing the performance of solenoidal spectrometers for inverse reactions
P. A. Butler
Published 31 May 2023

J. Phys. G: Nucl. Part. Phys. 50 060501 (2023) (https://doi.org/10.1088/1361-6471/acc348)
Optical potentials for the rare-isotope beam era
C. Hebborn *et al.*
Published 27 April 2023

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

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2. News to Report

a. UK Nuclear Physics ECR Forum - Registration and abstract submission open

The third UK Nuclear Physics early-career researcher forum will be held on the 26th and 27th of October at the Institute of Physics building in London. This year's event will have a science focus, with discussions of the future frontiers of nuclear science, and invited contributions from experts in applied and fundamental nuclear physics.

Registration for the event is now open: https://iop.eventsair.com/npecrf2023/

We anticipate holding two contributed sessions. The event is now open for abstract submissions, which will be handled separately through the Indico platform: https://indico.stfc.ac.uk/event/786/

Contribution from Jack Henderson, ECR Forum Chair (University of Surrey)

b. Workshop on Quantum Effects Near Threshold held in Edinburgh

The Workshop on Atomic and Nuclear Quantum Effects Near Threshold took place in Edinburgh on 31 May - 2 June 2021. Based on invited talks only, the workshop covered topics ranging from the physics of electron screening, to the emergence of nuclear cluster configurations near the particle threshold, modelled in the framework of open quantum systems, to R-matrix extrapolation techniques of nuclear cross section data, and more.

The workshop brought together about 25 nuclear physics theorists and experimentalists from over ten different institutions to discuss quantum effects important for nuclear reaction studies at low energies, both at accelerator-based laboratories and hot laser plasma facilities. It provided plenty of opportunities for lively and stimulating discussions, facilitated by the very relaxed atmosphere of St Leonard's Hall, an iconic nineteenth-century mansion within the grounds of the Pollock Estate.

The event was jointly organised by Prof Micheal Wiescher (Notre Dame, US) and Prof Marialuisa Aliotta (University of Edinburgh, UK) and kindly sponsored by the International Research Network for Nuclear Astrophysics (IReNA), the Center for Nuclear Astrophysics Across Messengers (CeNAM), the Institute of Physics, the University of Notre Dame (US) and the University of Edinburgh (UK). The help and support of the Local Organising Committee (MW, MA, Ragandeep Sidhu, Janet Weikel) and of the International Advisory Committee (C. Bruno, M. Gatu Johnson, G. Imbriani, K. Langanke. W. Nazarewicz, D. Phillips, A. Diaz-Torres, and A. Tumino) is also greatly acknowledged.

Photos from the workshop and further details can be found here.

Contribution from Marialuisa Aliotta, University of Edinburgh

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3. Outreach Activity

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4. Media Interactions

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