UK Nuclear Activity

August 2023 Issue 121

In this issue,

Newsletter archive: http://npg.dl.ac.uk/OutreachNewsletter/index.html

Nuclear Physics Public Engagement Website: NuclearPhysicsForYou

---

1. Nuclear Physics Publications for August*

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 **620** 965 (2023) (https://doi.org/10.1038/s41586-023-06352-6)
First observation of ^{28}O
Y. Kondo et al.
Published 30 August 2023

Phys. Lett. B **843** 138038 (2023) (https://doi.org/10.1016/j.physletb.2023.138038)
Intruder configurations in ^{29}Ne at the transition into the island of inversion: Detailed structure study of ^{28}Ne
H. Wang et al.
Published 10 August 2023

Phys. Lett. B **845** 138114 (2023) (https://doi.org/10.1016/j.physletb.2023.138114)
The spectroscopic quadrupole moment of the 2^+ state of ^{12}C: A benchmark of theoretical models
J. Saiz-Lomas et al.
Published 10 October 2023

Phys. Lett. B **845** 138149 (2023) (https://doi.org/10.1016/j.physletb.2023.138149)
Cross-shell states in ^{15}C: A test for p-sd interactions
J. Lois-Fuentes et al.
Published 10 October 2023

Edited by Jack Henderson, IOP Nuclear Physics Group Committee
jack.henderson@surrey.ac.uk

Phys. Lett. B **845** 138148 (2023) (https://doi.org/10.1016/j.physletb.2023.138148)
An alternative viewpoint on the nuclear structure towards ^{100}Sn: Lifetime measurements in ^{105}Sn
G. Pasqualato et al.
Published 10 October 2023

Phys. Rev. C **108** 025201 (2023) (https://doi.org/10.1103/PhysRevC.108.025201)
Measurement of the J/ψ photoproduction cross section over the full near-threshold kinematic region
S. Adhikari et al. (GlueX Collaboration)
Published 3 August 2023

Phys. Rev. C **108** 024311 (2023) (https://doi.org/10.1103/PhysRevC.108.024311)
Evidence of nonstatistical neutron emission following β decay near doubly magic 132Sn
J. Heideman et al. (IDS Collaboration)
Published 18 August 2023

*Also includes missed publications from previous months

---

2. News to Report

a. Symposium on Direct reactions and spectroscopy with hydrogen targets - past 10 years at the RIBF and future prospects

A symposium on direct reactions and spectroscopy with hydrogen targets took place at the Hilton York Hotel on 31 July - 4 August. The symposium aimed at reviewing and celebrating the experimental and theoretical work with liquid hydrogen targets at the RIBF facility, RIKEN, in the last decade; discussions on the future plans and perspectives were also initiated. The event covered gamma-ray spectroscopy experiments for nuclear structure studies, reaction studies at intermediate energy using magnetic spectrometers, theoretical work, and detector developments. It consisted of invited talks and poster contributions, encouraging participation from early-career researchers.

About 50 nuclear physics theorists and experimentalists from more than 10 countries, such as Japan, Germany, China and the USA, gathered in York. There were lively discussions during and outside the sessions with a relaxed atmosphere.

Financial support was provided by JSPS (The Japan Society for the Promotion of Science) London office, The Institute of Physics, and The European Physical Journal.

Support from members of the University of York and RIKEN Nishina Center, Japan was essential. Sidong Chen and Ryo Taniuchi (University of York) worked as local organising committees. Further details of the symposium such as members of the international advisory board and the organising committee can be found on the indico page: https://indico.stfc.ac.uk/e/minos_ribf

Contribution from Ryo Taniuchi, University of York

b. The 9th SUNFLOWER workshop

The 9th international Sunflower Workshop, the collaboration meeting for the in-beam gamma-ray spectroscopy experiments at the RIBF facility, took place at the University of York on the 28th of July 2023. It was organised as a hybrid meeting employing a modern Zoom-capable facility room in the Institute for Safe Autonomy on Campus East. The one-day workshop was attended by about 20 in-person and 20 remote participants for discussions on the status of ongoing data analysis, plans for proposing new experiments, and the developments of the new detector devices.

https://indico2.riken.jp/event/4523/

The event was organised by Marina Petri with support from the Nuclear Physics Group of the School of Physics, Engineering and Technology of the University of York. Further details of the workshop can be found here:

Contribution from Ryo Taniuchi, University of York

---

3. Outreach Activity

a. Daresbury Laboratory Open Day

On July 15, Daresbury Laboratory opened its doors to visitors for a fun day full of science and technology activities. More than 5300 people visited the laboratory, with 30% of those coming from socio-economically deprived areas. The STFC Nuclear Physics group hosted a series of interactive activities together with partners from the Universities of Liverpool and York, the UK Atomic Energy Authority, the Binding Blocks outreach project, Fusion CDT and colleagues from STFC National Laboratories. Our activities included a 360 camera, a LEGO chart of nuclei, detector demonstrations and fusion research made simple. A round-up from the open day can be seen here.

The open day was combined with school visits on the 10th and 11th of July, where 40 schools visited the Laboratory for activities and masterclasses on scientific computing, electron microscopy, nuclear physics and others. The nuclear physics masterclass activity was led by the University of Liverpool and focused on the effects of material type and thickness on radiation absorption.

Contribution from Philippos Papadakis, STFC Daresbury Laboratory

---

4. Media Interactions

-