



# UK Nuclear Activity

April 2022 Issue 106

In this issue,

1. [Nuclear Physics Publications for April](#)
2. [News to Report](#)
3. [Outreach Activity](#)
  - a. [Outreach talk by Ellis Rintoul](#)
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 April\*

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

Phys. Rev. Lett. **128**, 152701 (2022) (<https://doi.org/10.1103/PhysRevLett.128.152701>)

**First Application of Mass Measurements with the Rare-RI Ring Reveals the Solar r-Process Abundance Trend at A=122 and A=123**

H. F. Li *et al.*

Published 15 April 2022

Phys. Rev. Lett. **128**, 152501 (2022) (<https://doi.org/10.1103/PhysRevLett.128.152501>)

**Impact of Nuclear Deformation and Pairing on the Charge Radii of Palladium Isotopes**

S. Geldhof, M. Kortelainen, O. Beliuskina, P. Campbell, L. Caceres, L. Cañete, B. Cheal, K. Chrysalidis, C. S. Devlin, R. P. de Groote, A. de Roubin, T. Eronen, Z. Ge, W. Gins, A. Koszorus, S. Kujanpää, D. Nesterenko, A. Ortiz-Cortes, I. Pohjalainen, I. D. Moore, A. Raggio, M. Reponen, J. Romero, and F. Sommer

Published 12 April 2022

Phys. Rev. C **105**, L041301 (2022) (<https://doi.org/10.1103/PhysRevC.105.L041301>)

**Mapping the N=40 island of inversion: Precision mass measurements of neutron-rich Fe isotopes**

W. S. Porter *et al.*

Published 19 April 2022

Phys. Rev. C **105**, L042801 (2022) (<https://doi.org/10.1103/PhysRevC.105.L042801>)

**Revised decay properties of the key 93-keV resonance in the  $^{25}\text{Mg}(p,\gamma)$  reaction and its influence on the MgAl cycle in astrophysical environments**

G. Lotay, D. T. Doherty, R. V. F. Janssens, D. Seweryniak, H. M. Albers, S. Almaraz-Calderon, M. P. Carpenter, A. E. Champagne, C. J. Chiara, C. R. Hoffman, C. Iliadis, A. Kankainen, T. Lauritsen, and S. Zhu

Published 4 April 2022

Phys. Rev. C **105**, 044319 (2022) (<https://doi.org/10.1103/PhysRevC.105.044319>)

**Refined description of the positive-parity bands and the extent of octupole correlations in  $^{120}\text{Ba}$**

B. F. Lv *et al.*

Published 20 April 2022

Phys. Rev. C **105**, 044325 (2022) (<https://doi.org/10.1103/PhysRevC.105.044325>)

**Various nuclear structures in  $^{140}\text{Xe}$  studied by  $\beta$  decay of ground and isomeric states in  $^{140}\text{I}$**

A. Yagi *et al.*

Published 25 April 2022

NIM A **1033** 166662 (2022) (<https://doi.org/10.1016/j.nima.2022.166662>)

**The DESPEC setup for GSI and FAIR**

A. K. Mistry *et al.*

Published 6 April 2022

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## 2. News to Report

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### 3. Outreach Activity

#### a. Outreach talk by Dr. Ellis Rintoul

On Saturday 23rd April, Dr Ellis Rintoul (University of Liverpool, Nuclear Physics Group) delivered a talk at the University of Liverpool's Maths Club entitled "Prepare for trouble, make it Dobble", an exploration of the mathematics behind the game Dobble. During the talk, the 27 school students in attendance got hands on playing

the game for themselves, exploring the maths behind it and using their new knowledge to design their own sets. The talk was very well received by students and one commented that they enjoyed learning the mathematics behind the game since they are such a fan of it!

*Contribution by Charlie Devlin, University of Liverpool*

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## 4. Media Interactions

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