UK Nuclear Activity

May 2016 Issue 35

In this issue,

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

Nuclear Physics Public Engagement Website: www.stfc.ac.uk/NuclearPhysicsForYou

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1. Nuclear Physics Publications for May*

If you are publishing a paper that you think would be of media value please let Wendy Ellison wendy.ellison@stfc.ac.uk , STFC Press Officer, know. 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. C 93, 044618 (2016) http://journals.aps.org/prc/abstract/10.1103/PhysRevC.93.044618
Sensitivity of the fusion cross section to the density dependence of the symmetry energy
P.-G. Reinhard[1,*], A. S. Umar[2,†], P. D. Stevenson[3,‡], J. Piekarewicz[4,§], V. E. Oberacker[2,‖], and J. A. Maruhn[5,¶]
*Published 28 April 2016

Phys. Rev. C 93, 054601 (2016) http://journals.aps.org/prc/abstract/10.1103/PhysRevC.93.054601
Systematic investigation of projectile fragmentation using beams of unstable B and C isotopes
R. Thies *et al.* (R3B Collaboration)
Published 2 May 2016

Phys. Rev. Lett. 116, 182502 (2016) http://journals.aps.org/prl/abstract/10.1103/PhysRevLett.116.182502
Isomer Shift and Magnetic Moment of the Long-Lived $1/2^+$ Isomer in $^{79}_{30}Zn_{49}$: Signature of Shape Coexistence near ^{78}Ni
X. F. Yang[1,*], C. Wraith[2], L. Xie[3], C. Babcock[2,4], J. Billowes[3], M. L. Bissell[3,1], K. Blaum[5], B. Cheal[2],K. T. Flanagan[3], R. F. Garcia Ruiz[1], W. Gins[1], C. Gorges[6], L. K. Grob[7,6], H. Heylen[1], S. Kaufmann[6,8], M. Kowalska[7], J. Kraemer[6], S. Malbrunot-Ettenauer[7], R. Neugart[5,8], G. Neyens[1],W. Nörtershäuser[6], J. Papuga[1], R. Sánchez[9], and D. T. Yordanov[10]
Published 5 May 2016; Erratum Phys. Rev. Lett. **116**, 219901 (2016)

Phys. Lett. B, 756, 273 (2016) http://www.sciencedirect.com/science/article/pii/S0370269316001969
Impact of the first-forbidden β decay on the production of $A \sim 195$ r-process peak
Nobuya Nishimura[a], Zsolt Podolyák[b], Dong-Liang Fang[c], Toshio Suzuki[d, e]
Published 10 May 2016

*Also including missed publications from previous months.

Phys. Lett. B 756, 82 (2016) http://www.sciencedirect.com/science/article/pii/S0370269316001386
The decay pattern of the Pygmy Dipole Resonance of ^{140}Ce
B. Löher[a,c,h,*], D. Savran[a,c], T. Aumann[h,f], J. Beller[h], M. Bhike[b], N. Cooper[i], V. Derya[g], M. Duchêne[h], J. Endres[g], A. Hennig[g], P. Humby[i], J. Isaak[a,c], J.H. Kelley[e], M. Knörzer[h], N. Pietralla[h], V.Yu. Ponomarev[h], C. Romig[h], M. Scheck[j,k], H. Scheit[h], J. Silva[a,c], A.P. Tonchev[d], W. Tornow[b], F. Wamers[a,c,f], H. Weller[b], V. Werner[h,i], A. Zilges[g]
Published 10 May

Phys. Rev. C 93, 054315 (2016) http://journals.aps.org/prc/abstract/10.1103/PhysRevC.93.054315
Single-particle structure at N=29: The structure of ^{47}Ar and first spectroscopy of ^{45}S
A. Gade[1,2], J. A. Tostevin[3], V. Bader[1,2], T. Baugher[1,2], D. Bazin[1], J. S. Berryman[1], B. A. Brown[1,2],C. Aa. Diget[1,*], T. Glasmacher[1,2], D. J. Hartley[4], E. Lunderberg[1,2], S. R. Stroberg[1,2,†], F. Recchia[1], A. Ratkiewicz[1,2,‡], D. Weisshaar[1], and K. Wimmer[5,1,§]
Published 11 May 2016

Phys. Rev. C 93, 054617 (2016) http://journals.aps.org/prc/abstract/10.1103/PhysRevC.93.054617
Skyrme tensor force in heavy ion collisions
P. D. Stevenson[1], E. B. Suckling[1,2], S. Fracasso[1], M. C. Barton[1], and A. S. Umar[3]
Published 20 May 2016

Phys. Rev. C 93, 054325 (2016) http://journals.aps.org/prc/abstract/10.1103/PhysRevC.93.054325
High-spin structure of ^{134}Xe
A. Vogt[1,*], B. Birkenbach[1], P. Reiter[1], A. Blazhev[1], M. Siciliano[2,3], J. J. Valiente-Dobón[3], C. Wheldon[4], D. Bazzacco[5], M. Bowry[6], A. Bracco[7], B. Bruyneel[8], R. S. Chakrawarthy[9], R. Chapman[10], D. Cline[11], L. Corradi[3], F. C. L. Crespi[7], M. Cromaz[12], G. de Angelis[3], J. Eberth[1], P. Fallon[12], E. Farnea[5,†], E. Fioretto[3], S. J. Freeman[9], A. Gadea[13], K. Geibel[1], W. Gelletly[6], A. Gengelbach[14], A. Giaz[7], A. Görgen[15,16,12], A. Gottardo[3], A. B. Hayes[11], H. Hess[1], H. Hua[11], P. R. John[2,5], J. Jolie[1], A. Jungclaus[17], W. Korten[16], I. Y. Lee[12], S. Leoni[7], X. Liang[18], S. Lunardi[2,5], A. O. Macchiavelli[12], R. Menegazzo[5], D. Mengoni[18,2,5], C. Michelagnoli[2,5,‡], T. Mijatović[19], G. Montagnoli[2,5], D. Montanari[2,5,§], D. Napoli[3], C. J. Pearson[6,‖], L. Pellegri[7], Zs. Podolyák[6], G. Pollarolo[20], A. Pullia[7], F. Radeck[1], F. Recchia[2,5], P. H. Regan[6,21], E. Şahin[3,¶], F. Scarlassara[2,5], G. Sletten[22], J. F. Smith[18], P.-A. Söderström[14,#], A. M. Stefanini[3], T. Steinbach[1], O. Stezowski[23], S. Szilner[19], B. Szpak[24], R. Teng[11], C. Ur[5], V. Vandone[7], D. Ward[12], D. D. Warner[25,†], A. Wiens[1], and C. Y. Wu[11,**]
Published 25 May 2016

Phys. Rev. C 93, 054621 (2016) http://journals.aps.org/prc/abstract/10.1103/PhysRevC.93.054621
Extension of the ratio method to low energy
F. Colomer[1,*], P. Capel[1,†], F. M. Nunes[2,‡], and R. C. Johnson[2,3,§]
Published 25 May 2016

Eur. Phys. J. A, 52, 138 (2016) http://link.springer.com/article/10.1140/epja/i2016-16138-6
New results from isochronous mass measurements of neutron-rich uranium fission fragments with the FRS-ESR-facility at GSI
R. Knöbel, M. Diwisch, H. Geissel, Yu. A. Litvinov, Z. Patyk, W. R. Plaß, C. Scheidenberger,B. Sun, H. Weick, F. Bosch, D. Boutin, L. Chen, C. Dimopoulou, A. Dolinskii, B. Franczak, B. Franzke, M. Hausmann, C. Kozhuharov, J. Kurcewicz, S. A. Litvinov, M. Matoš, M. Mazzocco,G. Münzenberg, S. Nakajima, C. Nociforo, F. Nolden, T. Ohtsubo, A. Ozawa, J. Stadlmann, M. Steck, T. Suzuki, P. M. Walker, M. Winkler, T. Yamaguchi
Published 23 May 2016

Eur. Phys. J. A, 52, 147 (2016) http://link.springer.com/article/10.1140/epja/i2016-16147-5
Measurement of the $\vec{n}p \to d\pi^0\pi^0$ reaction with polarized beam in the region of the $d^*(2380)$ resonance
WASA-at-COSY Collaboration including M. Bashkanov
Published 30 May 2016

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2. News to Report

a. Third call for Short Time Scientific Missions in 2016

There is a European COST action for neutron star physics (including both nuclear theory and experiments) for the funding of research trips in the second half of this year. Anyone (particularly early career researchers) in a UK nuclear research group can apply for funds to travel somewhere within Europe (even some countries beyond the EU) for trips taking place between September and December 2016. See below for details:

We are inviting you to submit proposals for Short Time Scientific Missions (STSMs) between September and December 2016. Applications outside this timeframe will be discarded.
STSMs are aimed at strengthening existing networks and fostering collaborations by allowing researchers to visit an institution or organization participating in a given COST Action. A STSM should specifically contribute to the scientific objectives of the COST Action and, at the same time, allow the researchers to learn new techniques, gain access to specific data, instruments and/or methods not available at their home institution.
The deadline for this call is June 26, 2016.
All proposals will be reviewed by our Steering Committee; the results will be announced at the beginning of July 2016.

Please note that an STSM application must include the following documents:
1) A proposal including the proposal title, motivation, and a description of the proposed project
2) A CV of the applicant
3) A host agreement specifying if the host will provide matching funds
4) The confirmation (pdf file) generated by the electronic eCOST system.
Detailed instructions of how to apply can be found at
http://compstar.uni-frankfurt.de/how-to-apply/
For further information, please refer to
http://compstar.uni-frankfurt.de/stsm-2/
Contribution by Arnau Rios Huguet
a.rios@surrey.ac.uk (Surrey)

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3. Outreach Activity

Gravitational waves: A new window on the cosmos
Arnau Rios Huguet participated in a gravitational waves celebration event at the University of Surrey on 12th May. 140 students, teachers and members of the public attended four talks: 1) an introduction to General Relativity (Justin Read), 2) a discussion on Gravitational Waves (Alessia Gualandris), 3) an introduction to laser interferometry physics (Steve Clowes) and 4) a discussion on why GWs matter for other fields (Arnau Rios Huguet). The focus of the fourth talk was how Neutron Star research will benefit significantly from GW detections - and how the information from GWs has implications for nuclear physics (particularly neutron-neutron interactions).
Contribution by Arnau Rios Huguet
a.rios@surrey.ac.uk (Surrey)

Pint of science: Nuclear reactions, stars and the creation of the elements
Marialuisa Aliotta gave a talk at the three sisters bar in Edinburgh as part of the Pint of Science Festival on 23rd May. She spoke about the origin of the chemical elements and the intimate connection we bear with supernovae.

Contribution by Marialuisa Aliotta
maliotta@staffmail.ed.ac.uk (Edinburgh)

Calling all physicists who want to help inspire the next generation
The Institute for Research in Schools is a new charity that aims to engage school students and their teachers with fundamental research.
www.researchinschools.org
Its flagship project in nuclear physics is CERN@school. This programme places detector chips from the Medipix collaboration in schools for use in collaborative research projects such as monitoring the background radiation during the eclipse, analysing soil samples and measuring radioactivity in the oceans. Schools students also get access to data from these chips in space!
We are now looking for researchers to support the Institute's work by helping schools with their knowledge and expertise. We can make use of as little or as much time as you are able to give.
For more information please contact the CERN@school project manager Elizabeth Cunningham Elizabeth.Cunningham@stfc.ac.uk.

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4. Media Interactions
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