UK Nuclear Activity

January 2015 Issue 19

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 January

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.

NIM A 769, 20 (2015) http://www.sciencedirect.com/science/article/pii/S0168900214010821
Coincidence corrections for a multi-detector gamma spectrometer
R. Britton[a,b], J.L. Burnett[b], A.V. Davies[b], P.H. Regan[a]
Published 1 January 2015

Phys. Lett. B 740, 105 (2015) http://www.sciencedirect.com/science/article/pii/S0370269314008430
Production of inclusive Υ(1S) and Υ(2S) in p–Pb collisions at $\sqrt{s_{NN}}$ = 5.02 TeV
B. Abelev et al. (ALICE Collaboration), UK Authors: D. Alexandre, L.S. Barnby, M. Borri, D. Evans, M. A. S. Figueredo, L.D. Hanratty, P.G. Jones, A. Jusko, M. Krivda, G.R. Lee, R.C. Lemmon, R. Lietava, J. Norman, R. Romita, O. Villalobos Baillie
Published 5 January 2015

Phys. Lett. B 740, 243 (2015) http://www.sciencedirect.com/science/article/pii/S0370269314008478
High-spin states beyond the proton drip-line: Quasiparticle alignments in ^{113}Cs
P.T. Wady[a,b], J.F. Smith[a,b,*], B. Hadinia[a,b,1], D.M. Cullen[c], S.J. Freeman[c], I.G. Darby[d,2], S. Eeckhaudt[e], T. Grahn[e], P.T. Greenlees[e], P.M. Jones[e,3], R. Julin[e], S. Juutinen[e], H. Kettunen[e], M. Leino[e], A.-P. Leppänen[e], B.M. McGuirk[d], P. Nieminen[e], M. Nyman[e], R.D. Page[d], J. Pakarinen[e], E.S. Paul[d], P. Rahkila[e], S.V. Rigby[c], C. Scholey[e], J. Uusitalo[e], R. Wadsworth[f]
Published 5 January 2015

Phys. Lett. B 740, 298 (2015) http://www.sciencedirect.com/science/article/pii/S0370269314008776
Single-neutron orbits near ^{78}Ni: Spectroscopy of the N=49 isotope ^{79}Zn
R. Orlandi[a,b,c,d,e], D. Mücher[f], R. Raabe[b], A. Jungclaus[a], S.D. Pain[g], V. Bildstein[f], R. Chapman[c,d], G. de Angelis[h], J.G. Johansen[i], P. Van Duppen[b], A.N. Andreyev[c,d,j,e], S. Bottoni[b,k], T.E. Cocolios[m], H. De Witte[b], J. Diriken[b], J. Elseviers[b],

F. Flavigny[b], L.P. Gaffney[n,b], R. Gernhäuser[f], A. Gottardo[h], M. Huyse[b], A. Illana[a], J. Konki[l,o,p], T. Kröll[q], R. Krücken[f], J.F.W. Lane[c,d], V. Liberati[c,d], B. Marsh[r], K. Nowak[f], F. Nowacki[s], J. Pakarinen[l,o,p], E. Rapisarda[b], F. Recchia[t], P. Reiter[u], T. Roger[b,v], E. Sahin[h], M. Seidlitz[u], K. Sieja[s], J.F. Smith[c,d], J.J. Valiente Dobón[h], M. von Schmid[q], D. Voulot[r], N. Warr[u], F.K. Wenander[r], K. Wimmer[f]
Published 5 January 2015

Phys. Rev. C 91, 014301 (2015) http://journals.aps.org/prc/abstract/10.1103/PhysRevC.91.014301
T_z =−1→0 β decays of ^{54}Ni, ^{50}Fe, ^{46}Cr, and ^{42}Ti and comparison with mirror (^{3}He,t) measurements
F. Molina[1,*], B. Rubio[1,†], Y. Fujita[2,3], W. Gelletly[4], J. Agramunt[1], A. Algora[1,5], J. Benlliure[6], P. Boutachkov[7], L. Cáceres[7,8], R. B. Cakirli[9], E. Casarejos[6,‡], C. Domingo-Pardo[1,10], P. Doornenbal[7], A. Gadea[1,11], E. Ganioğlu[9], M. Gascón[6,§], H. Geissel[7], J. Gerl[7], M. Górska[7], J. Grębosz[7,12], R. Hoischen[7,13], R. Kumar[14], N. Kurz[7], I. Kojouharov[7], L. Amon Susam[9], H. Matsubara[3,‖], A. I. Morales[6], Y. Oktem[9], D. Pauwels[15], D. Pérez-Loureiro[6], S. Pietri[4], Zs. Podolyák[4], W. Prokopowicz[7], D. Rudolph[13], H. Schaffner[7], S. J. Steer[4], J. L. Tain[1], A. Tamii[3], S. Tashenov[7], J. J. Valiente-Dobón[11], S. Verma[6], and H-J. Wollersheim[7]
Published 5 January 2015

Phys. Rev. D 91, 012001 (2015) http://journals.aps.org/prd/abstract/10.1103/PhysRevD.91.012001
Measurement of electrons from semileptonic heavy-flavor hadron decays in pp collisions at √s = 2.76 TeV
B. Abelev et al. (ALICE Collaboration), UK Authors: D. Alexandre, L.S. Barnby, M. Borri, D. Evans, M. A. S. Figueredo, L.D. Hanratty, P.G. Jones, A. Jusko, M. Krivda, G.R. Lee, R.C. Lemmon, R. Lietava, R. Romita, O. Villalobos Baillie
Published 7 January 2015

Eur. Phys. J. C 75:1 (2015) http://link.springer.com/article/10.1140/epjc/s10052-014-3191-x
Production of $\Sigma(1385)^{\pm}$ and $\Xi(1530)^0$ in proton-proton collisions at √s = 7 TeV
B. Abelev et al. (ALICE Collaboration), UK Authors: D. Alexandre, L.S. Barnby, M. Borri, D. Evans, M. A. S. Figueredo, L.D. Hanratty, P.G. Jones, A. Jusko, M. Krivda, G.R. Lee, R.C. Lemmon, R. Lietava, J. Norman, R. Romita, O. Villalobos Baillie
Published 10 January 2015

Phys. Rev. Lett. 114, 022301 (2015) http://journals.aps.org/prl/abstract/10.1103/PhysRevLett.114.022301
ΛΛ Correlation Function in Au+Au Collisions at $\sqrt{s_{NN}}$ =200 GeV
L. Adamczyk *et al.* (STAR Collaboration), UK Authors: J.M. Nelson
Published 12 January 2015

Phys. Rev. C 91, 014311 (2015) http://journals.aps.org/prc/abstract/10.1103/PhysRevC.91.014311
Testing refined shell-model interactions in the sd shell: Coulomb excitation of ^{26}Na
B. Siebeck[1], M. Seidlitz[1], A. Blazhev[1], P. Reiter[1,*], R. Altenkirch[1], C. Bauer[2], P. A. Butler[3], H. De Witte[4], J. Elseviers[4], L. P. Gaffney[4], H. Hess[1], M. Huyse[4], T. Kröll[2,5], R. Lutter[6], J. Pakarinen[7,8], N. Pietralla[2], F. Radeck[1], M. Scheck[9,10], D. Schneiders[1], C. Sotty[4,11], P. Van Duppen[4], M. Vermeulen[12], D. Voulot[11], N. Warr[1], and F. Wenander[11]
Published 15 January 2015

Phys. Rev. C 91, 014319 (2015) http://journals.aps.org/prc/abstract/10.1103/PhysRevC.91.014319
Spectroscopy and lifetime measurements in ^{66}Ge, ^{69}Se, and ^{65}Ga using fragmentation reactions
A. J. Nichols, R. Wadsworth[*], M. A. Bentley, P. J. Davies, J. Henderson, D. G. Jenkins, I. Paterson, H. Iwasaki, A. Lemasson[†], V. M. Bader, T. Baugher, D. Bazin, J. S. Berryman, A. Gade, C. Morse, S. R. Stroberg, D. Weisshaar, K. Whitmore, K. Wimmer[‡], G. de Angelis, A. Dewald, T. Braunroth, C. Fransen, and M. Hackstein
Published 21 January 2015

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2. News to Report

a. UK Knowledge Landscape Tool

A new online tool has been launched to help the Prime Minister's Council for Science and Technology (CST) to map the research landscape in the UK:

https://www.gov.uk/government/news/uk-knowledge-landscape-tool-launches

The aim of this project is to build a picture of the whole research landscape in the UK and to develop a stronger evidence base. This evidence base will be available to inform future strategic decision-making and help the UK to maintain and develop its excellence in

research. As part of this project, the CST wish to better understand ***how the UK's research community defines itself and the links and interconnections that exist between research disciplines***. To help do this, the UK Knowledge Landscape Tool has been developed and has been designed to gather data from researchers on the disciplines, dependencies and key infrastructure they think make up modern research.
Researchers can visit knowledgelandscape and provide information about themselves (such as: position, research interests and collaborators), their perceptions of how their research areas fit within the landscape of connected disciplines and the main pieces of research infrastructure in their areas of expertise. This is a crowdsourcing exercise so the more responses the tool has, the better the mappings are likely to be. For this reason, it is important the as many people from the nuclear physics community contribute as possible!
Once a sufficiently large number of users have submitted their views, partial statistical analysis will be used to generate a 'consensus view' of how disciplines connect with and rely on each other. This output will then be made publicly available.
Contribution by Elizabeth Cunningham Elizabeth.Cunningham@stfc.ac.uk (STFC/Surrey)

b. Workshop on the Applications of Novel Scintillators in Research and Industry (ANSRI)
A three day workshop on the development of novel inorganic and organic scintillators for various applications in research and industry, was hosted by University College Dublin from the 12th-14th of January 2015. The event was jointly sponsored by the IoP nuclear physics, nuclear industry, instrument science and technology, and materials and characterisation groups, as well as Science Foundation Ireland (SFI), ORTEC and SCIONIX. The agenda and most of the presentations can be found here, on the ANRSI workshop website. The speakers included representatives from many international industries, research laboratories and academic institutions. The packed, three day schedule included: the development and characterisation of novel inorganic halide, glass-ceramic and plastic scintillators; applications of novel scintillators in a wide variety of fields, such as nuclear physics, medicine, gamma-ray astronomy and defence/security; and an IoP Ireland sponsored public talk one evening by Professor Luigi Piro on the newly approved €1 billion ESA space mission ATHENA. An early career prize sponsored by ORTEC was also held during the workshop for the best contribution. The first place prize was awarded to Dr. Cristina Nita from the University of Brighton and IFIN-HH, for her talk on "Lifetime measurements of nuclear excited states using a mixed array of HPGe and $LaBr_3$(Ce) detectors." Two runner-up prizes were also awarded to Aleksandar Gostojic (CSNSM Orsay, France) and Barbara Wasilewska (IFJ PAN, Poland). The event was attended by around 70 people from many different industries and scientific communities. The workshop was very successful in its primary goal of uniting many different scientists and industries together for the first time, with the aim of forming new collaborations for future research in the scintillator field. The positive feedback generated by this small international workshop attests to its success, and will likely lead to many future scientific exchanges between its participants for years to come.

Contribution by Oliver Roberts oliver.roberts@ucd.ie (Uni. College Dublin)

c. MEDICIS & Manchester
A meeting was held on Wednesday 28 January at The Christie Hospital in Manchester about CERN-MEDICIS. The meeting gathered 15 researchers ranging from nuclear and accelerator research, to radiopharmacy, radiotherapy and oncology. The discussion focused on the opportunities brought by those MEDical Isotopes Collected from ISolde (MEDICIS) and how Manchester's School of Physics & Astronomy could best work with The Christie Hospital, Wolfson Molecular Imaging Centre, and Central Manchester Hospital to make the most out of this new facility.

CERN-MEDICIS will use the proton beam dumped after the ISOLDE target to irradiate an off-line target for the production of radioisotopes, primarily for medical applications. The irradiated target will then be extracted from the high-radiation target area by a rail system, manipulated by a robotic arm, and finally attached to an off-line mass separator where the 50 years of experience from ISOLDE are applied to separate long-lived radioisotopes of potential interest to pre-clinical and phase-1 clinical trials. The idea is to offer a variety of alternative radioisotopes not currently available on the market to test their potential use before a full business case can be put together.
The CERN-MEDICIS collaboration is currently under construction and we now have a unique opportunity to get the UK on board. For more information about CERN-MEDICIS, please refer to this publication (link: http://www.mdpi.com/2076-3417/4/2/265) or contact Dr Thomas Cocolios thomas.cocolios@manchester.ac.uk.
Contribution by Thomas Cocolios thomas.cocolios@manchester.ac.uk (Manchester)

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3. Outreach Activity

Public Engagement Fellowships. The aim of this scheme is to contribute to the STFC's Public Engagement Programme by investing in good communicators with research credibility. They will act as champions or ambassadors for STFC's science, technology, engineering and mathematics ('STEM') to schools, the media or public audiences. The scheme is open to STFC grant funded researchers or facility users in the UK or abroad.
The closing date for applications : 26th February 2015 at 4pm.
There is a two-stage process. Short-listed applicants will be interviewed in April/May 2015, and funding decisions would be known very soon after interviews. Fellowships are normally given in the form of research grants to approved Research Organisations eligible to hold research grants.
For further details on the scheme and how to apply please go to:
http://www.stfc.ac.uk/1840.aspx
Applicants are also encouraged to telephone the STFC Public Engagement team for further information:
Dr Neville Hollingworth
Public Engagement Manager
Polaris House, North Star Avenue, Swindon, SN2 1SZ.
Email: neville.hollingworth@stfc.ac.uk
Tel: +44 (0)1793 442175.

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4. Media Interactions

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