496. Wilhelm und Else Heraeus-Seminar

February 6th to 10th, 2012 – Physikzentrum Bad Honnef – Germany

Astrophysics with modern small-scale accelerators

Monday, February 6th, 2012

8:30 - 10:30, Session 1

E. Dreisigacker: About the Wilhelm and Else Heraeus Foundation (15)
R. Reifarth: Research at small-scale accelerators (35+10)
M. Wiescher: Challenges and limits of experiments with small accelerators (45+15)

10:45 - 12:30, Session 2

T. Rauscher: Differences between Nuclear Reactions in Stars and in the Laboratory (45+15)
A. Sauerwein: Experiments to study optical-model potentials (35+10)

14:00 - 15:45, Session 3

M. Heil: Neutron-induced reactions (45+15)
C. Spitaleri: Experimental setup for Trojan Horse Method in Nuclear Astrophysics (35+10)

16:15 - 18:00, Session 4

Gy. Gyürky: Proton- and Alpha-induced reactions (45+15)
K. Schmidt: The $^{40}Ca(\alpha,\gamma)^{44}Ti$ reaction studied by activation (35+10)

Tuesday, February 7th, 2012

8:30 - 10:15, Session 5

O. Meusel: The Accelerator Based Neutron Source FRANZ (45+15)
M. Fonseca High power targets for FRANZ (35+10)

10:45 - 12:30, Session 6

D. Bemmerer: Underground Laboratories (45+15)
A. Caciolli: Measurement of $^{17}O(p,\gamma)^{18}F$ resonance at E=183.3 keV with the LUNA accelerator (35+10)

14:00 - 15:50, Session 7

K. Sonnabend: Photon-induced reactions (45+15)
Short poster presentations (each 3+2)

1. K. Göbel: Mo(γ,n) and real photons for the validation of CD
2. M.-L. Menzel: Towards a measurement of the $^{22}Ne(p,\gamma)^{23}Na$ cross-section at LUNA
3. J. Glorius: Investigation of particle-nucleus optical potentials for p-process nucleosynthesis
4. T. Heftrich: $^{60}Fe(n,\gamma)^{61}Fe$ at TRIGA reactor, Mainz, and future possibilities at FRANZ
5. M. Weigand: Cross section measurements with the Karlsuhe 4π BaF_2 detector using a 3.7 MV Van de Graaff accelerator
6. M. Pohl: Measurement of low energy neutrons with scintillation detectors
7. A. Bisoi: Surface characterisation of ^{14}N implanted targets
8. J. Feige: The search for Supernova-produced radionuclides in deep-sea sediments with AMS
9. S. Altstadt: Coulomb dissociation of ^{14}B and ^{15}B to constrain the astrophysical r-process
10. M. Heine: (γ,n)-rates of short-lived carbon isotopes with the LAND/R^3B setup
11. L.M. Fraile: A project for a nuclear astrophysics accelerator under the Pyrenees

16:20 - 18:00, Session 8

Posters and discussions

Wednesday, February 8th, 2012

8:30 - 10:15, Session 9

G. Rugel: Accelerator Mass Spectrometry (45+15)
L. Netterdorn: Experimental facilities for reaction studies in Nuclear Astrophysics in Cologne (35+10)

10:45 - 12:30, Session 10

S. Bishop: Measuring Reaction Rates for Nova Nucleosynthesis (45+15)
A. Parikh: Experiments to constrain nucleosynthesis in hydrogen-burning environments (35+10)

Wednesday, February 8th, 2012 (cont.)

14:00 - 16:00, Session 11

F. Käppeler: Astrophysics with spallation sources (45+15)

R. Wolf: A multi-reflection time-of-flight mass separator for high-resolution beam purification at ISOLTRAP (35+10)

Short poster presentations (each 3+2)

1. A. Koloczek: Nucleosynthesis simulations in AGB stars
2. C.T. Nsangu: $^{12}C+^{12}C$ fusion reaction at low energies
3. J. Tomlinson: Indirect measurements of the $^{18}F(\alpha,p)^{21}Ne$ reaction with TUDA

16:30 - 18:00, Session 12

Posters and discussions

Thursday, February 9th, 2012

8:30 - 10:15, Session 13

R. Krücken: Astrophysics with rare isotope beams at TRIUMF (45+15)

E. Martin: TACTIC: The TRIUMF Annular Chamber for Tracking and Identification of Charged particles (35+10)

10:45 - 12:30, Session 14

R. Plag: Data acquisition in nuclear physics – from past to future (45+15)

S. Schmidt: Flash-ADC-based data acquistion at the Frankfurt neutron source FRANZ (35+10)

14:00 - 16:15, Session 15

M. Anders: Direct measurement of the $d(\alpha,\gamma)^6Li$ cross-section at astrophysical energies (35+10)

M. Carmona: $^4He(^3He,\gamma)^7Be$ cross section at the ECM of 900-2800 keV measured at a 5MV tandem accelerator (35+10)

C. Granja: Spatial and Time Correlated Detection of the Decay Chain of Single Radioactive Nuclei (35+10)

16:30 - 18:00, Session 16

H. Fynbo: A new method for studying broad ^{12}C resonances using small accelerators and compact setups (35+10)

R. Depalo: Lifetime measurement of the 6.79 MeV state in ^{15}O with the AGATA demonstrator (35+10)

Friday, February 10th, 2012

8:30 - 10:15, Session 17

discussions

10:45 - 12:30, Session 18

summary, future plans