

New Experiments and Results from FRS-LAND

Results:

- New results from S188 - ^{11}Be spectroscopic factors
- First results from S233 – ^{23}O invariant mass (preliminary)

Recent experiment:

- Status of S245 (September 2001)

Forthcoming experiments:

- S221: Isospin Structure of Giant Resonances
- S252: Experimental Study of Neutron-Skin Thicknesses

Experiment S245 Studies of bound and unbound states at and near the driplines

Proton induced breakup of ^8He and ^{14}Be :

- Primary beam: $^{18}\text{O} \sim 6 \times 10^{10}/\text{spill}$
- Secondary beams from the FRS
 - $^8\text{He} \sim 3000/\text{spill}$
 - $^{14}\text{Be} \sim 300/\text{spill}$
 - ($^{11}\text{Li} \sim 400/\text{spill}$)
- LAND setup + liquid hydrogen target
+ proton recoil detection
- Truly kinematically compete!

Experiments S221 and S252

S221: Isospin Structure of Giant Resonances

- ^{132}Sn and neighboring nuclei (produced by ^{238}U fission)
- electromagnetic excitation of the GDR
 - expected fragmentation of GDR strength
 - Pygmy resonance?
 - astrophysics
- Knockout reactions (spectroscopic factors)
- γ -spectroscopy

S252: Experimental Study of Neutron-Skin Thicknesses

- ^{124}Sn (primary beam) test experiment
- Excitation of SDR^- by (p,n) reaction
- Determination of the neutron-skin thickness

Schedule: April 7 to April 21 (only night shifts):

^{124}Sn primary beam

April 24 to May 13 (^{238}U beam)

^{132}Sn and neighboring nuclei

as fragments from FRS

web-page: www-land.gsi.de (see experiments)

COLLABORATIONS

Experiments S188 and S233

GSI University of Frankfurt University of Krakow
University of Mainz TU Darmstadt
Hugarian Academy of Sciences
University of Garching MPI Heidelberg

Experiment S245

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Experiments S221 and S252

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