Gamma spectroscopy of neutron-deficient nuclei close to ^{70}Br using the EAGLE array and ancillary detectors at the Heavy Ion Laboratory in Warsaw

D. Duda[1], M. Matejska-Minda[1], P. Bednarczyk[1], M. Ciemała[1], G. Jaworski[2], I. Kuti[3], M. Palacz[2], G. de Angelis[4], T. Cap[5], N. Cieplicka-Oryńczak[1], I. Dedes[1], K. Gajewska[1], J. Grębosz[1], K. Hadyńska-Klęk[2], Ł. Iskra[1], M. Kmiecik[1], M. Komorowska[2], M. Kopeć[6], M. Kowalczyk[2], J.A. Kowalska[2], A. Krakó[3], B. Kruzsicz[3], M. Loriggiola[4], A. Malinowski[6], M. Matuszewski[2], K. Mazurek[1], J. Molnár[3], P.J. Napiorkowski[2], A. Otręba[6], W. Poklepa[6], M. Regulska[6], J. Samorajczyk-Pyśk[2], P. Sekrecka[2], A. Stolarz[2], A. Špaček[2], J. Towers[7]

[1] Institute of Nuclear Physics Polish Academy of Sciences, Kraków, Poland
[2] Heavy Ion Laboratory, University of Warsaw, Warszawa, Poland
[3] HUN-REN Institute for Nuclear Research (HUN-REN ATOMKI), Debrecen, Hungary
[4] INFN, Laboratori Nazionali di Legnaro, Legnaro, Italy
[5] National Centre for Nuclear Research
[6] Faculty of Physics, Warsaw University of Technology, Warszawa, Poland
[7] Department of Physics, University of York, York, UK

ABSTRACT

The A=70, T=1 isobaric multiplet exhibits an anomalous Coulomb energy difference (CED) behavior, with the ^{70}Br/^{70}Se pair showing a decrease in CED with increasing spin, contrary to the typical trend observed in other *pf*-shell nuclei. To investigate this phenomenon, a dedicated experiment was carried out at the Heavy Ion Laboratory of the University of Warsaw using a 88 MeV ^{32}S beam impinging on a ^{40}Ca target. Excited states in A~70 neutron-deficient nuclides were populated in fusion-evaporation reactions. Gamma rays were measured with the EAGLE spectrometer. Transitions originating from ^{70}Br were identified via the *pn* reaction channel selected using the NEDA (neutron) and DIAMANT (proton) detector arrays.

The status of the data analysis and first results will be presented during the talk.