Contribution ID: **8** Type: **poster with financial aid**

DELAYED MULTIPLE NEUTRON EMISSION FROM PHOTOFISSION FRAGMENTS. NEUTRON MEASUREMENTS AT ALTO: TRIAL EXPERIMENT, FIRST RESULTS.

Delayed-neutron emission probabilities (Pn) and half-lives (T1/2) are among the easiest measurable gross β-decay properties of neutron-rich nuclei far from stability. Not only are they importance for reactor applications, but also they play huge role in the context of studying nuclear structure features and astrophysical scenarios. Correlations between neutrons emitted can provide with valuable information inaccessible otherwise about the pairing of nucleons inside the atomic nucleus since neutrons are not disturbed by the Coulomb barrier and correlation should be observable outside the nucleus.
Up to now there are a lot of experimental data about multiple (up to 4 neutrons) neutron emission has been obtained in light nuclei range [1] and only double neutron emission for 98,100Rb [2] in ranges of medium and heavy nuclei.
Measuring the β-delayed neutron emission probability along the chains of very neutron-rich isotopes in the 132Sn region predicted effects possibly to be observed are –irregularities in the A-dependence of the Ptotal –values and suppression of the delayed neutron emission probability [3,4]. A favorable situation for dedicated studies can be found in the region of the Sn isotopes with the neutron numbers N>82 where typically Qβ-2n=2-5 MeV.
The unique experimental detection system created with at ALTO [5] (IPN Orsay) consisted of three kinds of the detectors were constructed. 90 3He counters were used together with a detector of gammas and beta. The 3He detector has been created at FLNR (Dubna) and has high, constant in broad range of energy, efficiency; are free from “cross talk”effect and also has easy changing geometry. The detailed description of the detector is given in [6].Three-partial coincidence trial experiment was carried out at a mass separated beam (A = 136). The Pn probability for 136Te was measured and compared with the table one. Due to low statistics the result obtained has quite big errors however it proves availability of the unique system created for direct measurements of delayed multi neutron emissions from neutron reach fission fragments. The experiment for measurements P2n of 136Sb is scheduled.

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no

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yes

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yes

Are you a student, postdoc or an attendee from an “emerging”country and would like to apply for financial support?

Yes, I am PhD student, so I would appreciate any finincial support.

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