Contribution ID: **31** Type: **Oral**

On studying decays of E1 giant resonance in heavy nuclei with neutron emission under γ-quanta from Compton backscattering

Sunday 6 July 2025 12:30 (20 minutes)

There were considered in [1–3] some issues of experimental study of photonuclear reactions under γ-quanta with energies $E\gamma$ in the region of excitation of E1 giant resonance in atomic nuclei with spectrometry of emitted fast neutrons for the γ-source from collimated Compton backscattering at the National Center for Physics and Mathematics (NCPhM, Sarov, Russia [4]). In this report for heavy nuclei, including actinides, the following were analyzed:
• main possible partial photonuclear reactions in pointed out nuclei with neutron emission occurring at $E\gamma <$ 20 MeV [5, 6];
• parameters of the collimated γ-sources with $E\gamma <$ 20 MeV from collimated Compton backward scattering High Intensity γ-ray Source (HIγS, Durham, USA [7]) and NCPhM in its several variants [2, 3]);
• characteristics of the multi-channel neutron spectrometer proposed for NCPhM [2, 3];
• opportunities of conducting photoneutron experiments with measurements of multiplicity, as well as energy and time distributions of neutrons produced in heavy nuclei, including actinides, at NCPhM γ-sources with proposed in [2, 3] the scintillation spectrometer of fast neutrons which uses both amplitude and time-of-flight data.

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Session Classification: 2. Experimental and theoretical studies of nuclear reactions

Track Classification: Section 2. Experimental and theoretical studies of nuclear reactions.