

## Prompt fission neutrons investigation at IREN in resonance neutron energy range

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Investigations of prompt fission neutron emission are of importance in understanding the fission process in general and the sharing of excitation energy among the fission fragments in particular. Experimental activities at JINR on prompt fission neutron (PFN) emission are underway for more than 20 year. Main focus lies on investigations of prompt neutron emission from the reactions  $^{252}\text{Cf(sf)}$  and  $^{235}\text{U(n,f)}$  carried out in JINR and EC-JRC-IRMM in the region of the resolved resonances. For the last reaction strong fluctuations of fission fragment mass and the mean total kinetic energy distributions have been observed as a function of incident neutron energy [1, 2]. In addition fluctuations of prompt neutron multiplicities were also observed [3]. The goal of the present study is to verify the current knowledge of prompt neutron multiplicity fluctuations and to study correlations with fission fragment properties. Recent measurement of PFN multiplicity in resonance neutron induced fission of  $^{235}\text{U(n,f)}$  reaction reveal surprising result, stimulated us to investigate the PFN multiplicity at IREN with new high efficiency experimental setup.

### References

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### The speaker is a student or young scientist

No

### Section

1. Experimental and theoretical studies of nuclear reactions

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