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Neutron captures in the stellar slow and rapid process regimes probed in the laboratory

Neutron capture experiments in the laboratory help us understanding the stellar production of heavy elements in nature. Measurements of capture cross sections in the stellar slow (s-) process energy regime were measured for neutrons produced by the ${}^7\text{Li}(p,n){}^7\text{Be}$ reaction with the high-intensity Liquid-Lithium Target (LiLiT) at the Soreq Applied Research Accelerator Facility (SARAF, Israel). The NIF (National Ignition Facility) at Lawrence Livermore National Laboratory (USA) produces a neutron field with a density well into that of the rapid (r-) process regime by imploding a DT-filled capsule with high-power lasers. First experiments performed recently will be described.

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