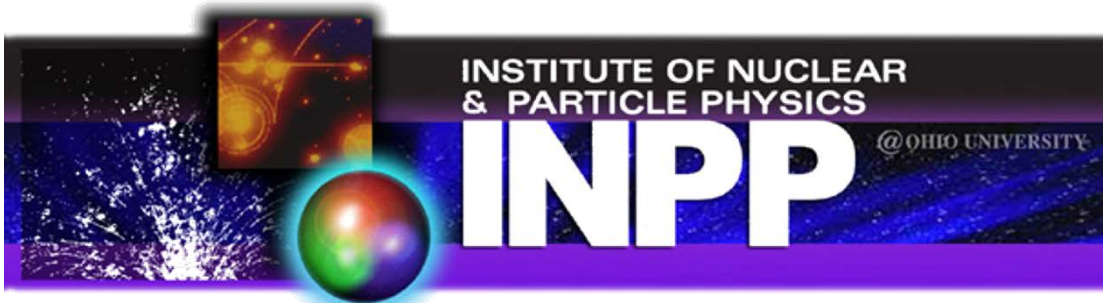

Using a bright neutron source to study the nuclear structure of light-Z nuclei (^{2}H,^{7}Li,^{9}Be)

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Many open questions remain about the origin of light elements (A<12) that are essential for understanding primordial events in the early Universe. [J. Johnson et. al., Phil. Trans. R. Soc. A 378]. Discrepancies between measured energy spectra from neutron-induced inelastic reactions of light-Z nuclei and theoretical model calculations are prime examples. To explore these inelastic reactions, a new experimental configuration is under development at the OEMGA laser facility. This platform employs the (10^{13}n/100-ps) 14-MeV neutrons emitted in ICF implosions to induce inelastic scattering and reactions in light nuclear targets. Target materials are contained in nuclear interaction vessels aligned with a high-resolution time-of-flight spectrometer. The energy spectra of neutrons from neutron scattering and neutron induced reactions on several light targets have been measured in the angular range from 0^{o} to 7^{o}. Experimental neutron cross sections are interpreted in terms of reaction mechanisms and nuclear structure

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Tuesday, October 20, 2020

4:10 pm

Video Call Link: Click Here (pass: INPP)