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## NUCLEAR DATA MEASUREMENTS WITH COLLIMATED FAST NEUTRON BEAMS PRODUCED BY CYCLOTRON-DRIVEN NEUTRON GENERATORS

*Tuesday, 8 September 2020 14:30 (20 minutes)*

At the Nuclear Physics Institute at the laboratory of Fast Neutron Generators, a new neutron collimator was recently constructed. Simultaneously a new neutron converter coupled to the collimator was constructed and successfully tested last year. Collimated beams of fast neutrons bringing new experimental possibilities especially for on-beam measurements with semiconductor detectors. Motivated by the development of future fission and fusion energy projects the nuclear data measurements of cross-sections for nuclear reactions induced by fast neutrons are under preparation (or were already conducted) at the Department of Nuclear Reactions at the NPI CAS. A new vacuum chamber with silicon detector composed telescopes will allow us to perform precise measurements of double-differential cross-sections for interaction (n, cp) induced by fast neutrons with kinetic energies from 5 to 33 MeV. The current status of development and preparations for experiments with the new vacuum chamber will be given.

Moreover already measured experimental total cross-section data for reaction  $n + O(n, tot)$  will be shown and a particular experimental approach to transmission experiments will be described.

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