

DEVELOPMENT OF THERMAL NEUTRON DETECTORS BASED ON STRAW TUBES

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A promising direction for the development of neutron detectors at JINR is the construction of detectors based on boron carbide (B_4C), which are widely used in world scientific center as an alternative to 3He detectors. This paper presents the results of evaluating the theoretical efficiency of a thermal neutron detector based on straw tubes with solid-state converter B_4C . The software package Geant4 was used as a tool for numerical simulation by the Monte Carlo method. The simulation results are compared with experimental measurements of prototype the straw detector by using neutron source ^{252}Cf and the experimental data obtained on the reflectometer REFLEX, 9th channel of the reactor IBR-2.