

Neutron spectrometer for the experiments with radioactive beams on the ACCULINNA-2 fragment separator

The stilbene crystals based neutron spectrometer built in the Flerov Laboratory of Nuclear Reactions (FLNR JINR, Dubna, Russia) is described in the presentation. Time resolution as a function of the signal amplitude and the energy resolution are derived for the detection of gamma-quanta. At the amplitude of 1MeV in electron equivalent (e.e.) $dT = 0.18$ ns, $dE/E = 4,5\%$. The quality of the neutron-gamma discrimination is studied. Assured separation is possible for energy losses exceeding 100 keV e.e. Such a value corresponds to the recoil proton kinetic energy of 700 keV. The neutron spectrometer significantly extends experimental capability of the facility and allows to perform correlation experiments with radioactive beams at the fragment-separator ACCULINNA-2 at a much higher level.

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