Fast neutron detection by resistive plate chambers

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Experiments with radioactive ion beams often require the detection of fast neutrons with large angular acceptance, high efficiency and a capability of multi-neutron event identification. We have developed a detector of 2 m length based on resistive plate chambers. Extensive tests have been carried out by electron and neutron beams compared to Monte Carlo simulations, which will be discussed in details. Furthermore, a possible modular setup for invariant mass spectroscopy of multi neutron (with energies of 0.2-1 GeV) emission will be presented.