

Neutron detector using scintillators in LAMPS

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Large Acceptance Multi-Purpose Spectrometer (LAMPS) experiment aims to measure the nuclear symmetry energy for rare isotopes with a wide range of N-Z at Rare isotope Accelerator Complex for ON-line experiment (RAON) in Korea. Neutrons have no net charge so that they cannot be detected by a device using electromagnetic force. The neutron detector for LAMPS is made of 4 layers of scintillators where each layer is arrayed with 20 scintillators. The size of a scintillator is 200 cm x 10 cm x 10 cm. When the neutron passes through the scintillator, the gamma ray from (n, gamma) reaction enters the photomultiplier tube at both ends. Then they generate an electrical signal. The 2-D scintillator is expected to be useful for measuring the Time of Flight and hit position of the neutrons. In this talk, the principle and the structure of the neutron detector and the results from cosmic ray will be presented. Furthermore, a plan for DAQ development will be introduced.

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