

15th International Conference on Muon Spin Rotation, Relaxation and Resonance



Contribution ID: 287 Contribution code: P-VIR-7

Type: Poster

Intensity measurement of the surface muon beam of MELODY

A Muon station for sciEnce, technoLOgy and inDustrY (MELODY) project will be constructed at China Spallation Neutron Source. The Phase I project will provide a surface muon beam with a pulse width of 100 ns at a rate over $10^5 \mu^+$ /pulse. Accurate monitoring of the muon beam intensity is essential for the calibration of the μ SR spectrometer. The key of the beam intensity measurement is to distinguish positrons, the major contamination of the muon source. A double-stacked scintillator detector scheme has been proposed, which can use pulse shape discrimination method to determine the intensity of positrons and muons. Detailed description of the detector principle and simulated result will be presented.

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Session Classification: Posters

Track Classification: New techniques