

A High Precision n-p Scattering Measurement at 14.9 MeV

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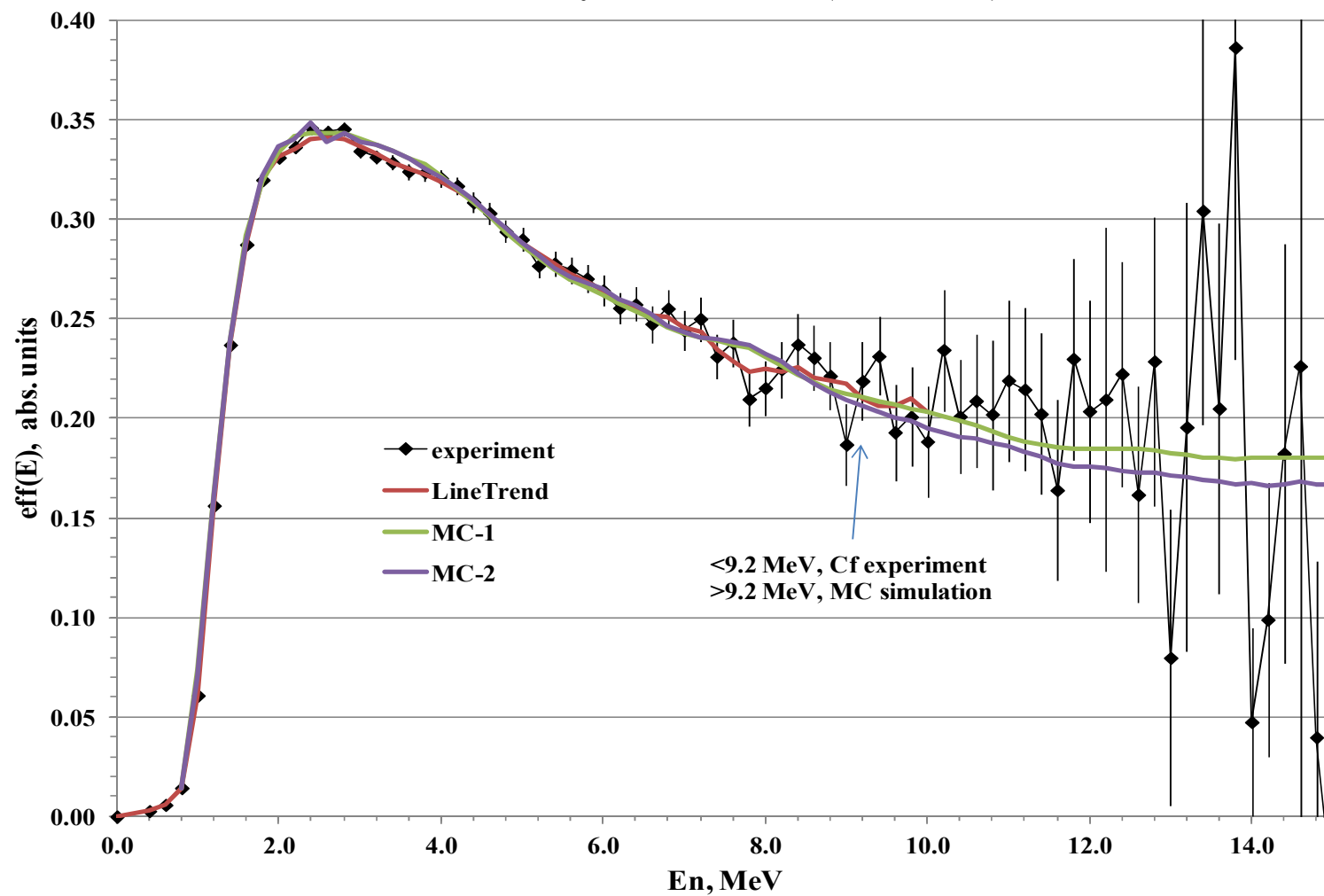
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Abstract. The n-p scattering angular distribution was measured with 14.9 MeV incident neutrons using the traditional time-of-flight technique with neutron-gamma discrimination. The scattering angle varied from 20° to 65° (laboratory system) in 5° incremental steps. The efficiency of the neutron detectors was measured in the energy range 2-9 MeV relative to the ²⁵²Cf-standard, and was calculated using Monte Carlo methods in the 2-14 MeV energy range. Two methods of analysis were applied for experimental and simulated data: a traditional approach with a fixed threshold, and a dynamic threshold approach. The present data agree with the ENDF/B-VII evaluation for the shape of n-p angular distribution within about 1.5%

efficiency for detector 3 (traditional)



RF for $E_0=10.27$ MeV,

