

Abstract Submitted
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Neutron-Deuteron Breakup and Quasielastic Scattering ALICE OHLSON, JUNE MATTHEWS, WILBUR FRANKLIN, BRIAN DAUB, Massachusetts Institute of Technology, TAYLAN AKDOGAN, Bogazici University, Istanbul, MARK YULY, STEVEN WALLACE, STEPHEN THOMSON, DANIEL HAAS, Houghton College — Quasielastic scattering in the 200 MeV region is studied by impinging a pulsed neutron beam on a deuterium target at the Weapons Neutron Research facility at the Los Alamos Neutron Science Center. The scattered neutrons from the $d(n,np)n$ reaction are detected by a wall of neutron time-of-flight scintillators, and scattered protons are detected by a permanent magnet spectrometer with two sets of wire chambers. This setup allows for measurement of incident neutron energy, scattered neutron energy, and scattered proton energy, as well as scattering angle and position for all scattered particles. The results of the experiment are compared with a Monte Carlo simulation of quasielastic scattering, to observe the differences between two-body elastic and three-body quasielastic collisions.

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