

Abstract Submitted
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Development of the FNIT detector for 2-20 MeV solar neutrons¹

ULISSE BRAVAR, PAUL J. BRUILLARD, University of New Hampshire, ERWIN O. FLUECKIGER, University of Bern, ALEC L. MACKINNON, University of Glasgow, JOHN R. MACRI, MARK L. MCCONNELL, University of New Hampshire, MICHAEL R. MOSER, University of Bern, JAMES M. RYAN, University of New Hampshire — The Fast Neutron Imaging Telescope (FNIT) is a newly developed neutron detector with imaging and energy measurement capabilities, sensitive to neutrons in the 2-20 MeV energy range. FNIT was conceived as a candidate instrument for the Solar Sentinels program. Its design is optimized to measure neutrons produced in solar flares from the inner heliosphere. The detection principle is based on multiple elastic neutron-proton scatterings in plastic scintillators. By measuring the scattering coordinates and determining the energy of recoil protons and time of flight of scattered neutrons, the energy spectrum and incident direction of primary neutrons can be reconstructed. We present the results of recent laboratory efforts and describe the performance of the FNIT prototype.

¹Development of the FNIT detector for 2-20 MeV solar neutrons

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