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Silicon Detector Characterization for the DAPPER Array[1]
AUSTIN ABBOTT, MAXWELL SORENSEN, ALAN B. MCINTOSH, EAMES BENNETT, JEROME GAUTHIER, KRIS HAGEL, SHUYA OTA, SHERRY J. YENNELLO, Texas AM University Cyclotron Institute, AARON COUTURE, Los Alamos National Laboratory, ANNA SIMON, University of Notre Dame — An accurate description of neutron capture is important for modeling stellar lifecycles and can give insight into the production of the elements. The gamma rays from the decay of ^{60}Fe, an s-process isotope, are seen in the interstellar medium and can constrain stellar evolution models. The photon strength function (PSF), which describes the likelihood of certain nuclear transitions, is necessary in understanding the neutron capture process. An observed enhancement in the PSF at low excitation energies for iron isotopes has implications for the reaction rates of neutron rich isotope production in nucleosynthesis. For the purpose of measuring the PSF of ^{60}Fe, the Detector Array for Photons, Protons, and Exotic Residues (DAPPER) is being developed. Design and testing of the array using ^{57}Fe(d,pγ)^{58}Fe will be discussed, with focus on the proton detector.

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