

Abstract Submitted
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**An Energy Calibration of the FN Tandem Accelerator Magnet
Analyzing System at Notre Dame**

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— This work established the groundwork for a proper calibration of the magnet analyzing system for the FN Tandem accelerator at the University of Notre Dame. The calibration utilized (p,n) reactions with well-known threshold energies to correlate NMR Frequency with beam energy. A neutron detector composed of three ^3He proportional counters with moderating polyethylene has been constructed to detect the neutrons. To maximize detection efficiency, GEANT4 was employed to determine the optimal dimensions of the moderator. The maximum efficiency was found to occur with a 3-inch moderator half-length, with the efficiency varying by 2.2% over an 11keV proton beam energy range. A preliminary analysis of data from the $^{27}\text{Al}(p,n)^{27}\text{Si}$ yields a result of 5.803MeV corresponding to a frequency of 14.64 ± 0.01 MHz.

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