Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

An Automated Relative Time Calibration for the MoNA DANIEL ALBERTSON, Concordia College, MONA COLLABORATION — The Modular Neutron Array (MoNA) is a highly efficient time-of-flight neutron detector consisting of 144 individual plastic scintillation bars. It is used in conjunction with a sweeper magnet and charged particle detectors at the National Superconducting Cyclotron Laboratory to reconstruct neutron separation energies of neutron unbound nuclei from the velocities of the ejected neutrons and residual fragments. The PMT signals from each bar in the array have slightly different transit times. An offset to calibrate the bars relative to each other must be calculated using cosmic ray muons. The current relative calibration employs a labor intensive and imprecise method. A more precise procedure for finding the weighted average of the time difference between any two bars and calculating the calibration values was developed and automated. Details of the procedure will be presented.

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Date submitted: 31 Jul 2006 Electronic form version 1.4