

Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Accurate Energy Calibrations from Cosmic Ray Measurements¹

AMY DELINE, JOSEPH FINCK, Central Michigan University, ARTEMIS SPYROU, MICHAEL THOENNESSEN, MSU/NSCL, PAUL DEYOUNG, Hope College, THE MONA COLLABORATION — The Modular Neutron Array, located at the NSCL at Michigan State University, is used in conjunction with the MSU/FSU Sweeper Magnet to study the breakup of neutron-rich nuclei. Fragmentation reactions create particle-unstable nuclei near the neutron dripline which spontaneously breakup by the decay of one or two neutrons with energies that reflect the nuclear structure of unbound excited and ground states. The neutrons continue forward into MoNA where their position and time are recorded, and the charged fragments' position and energy are measured by the array of detectors following the Sweeper Magnet. In such experiments it is important to be able to identify one-and two-neutron events hitting MoNA. For this reason an accurate energy calibration of the MoNA bars is crucial. The present work focuses on performing an energy calibration from cosmic ray measurements. The application of different gates on the cosmic ray spectra allowed the selection of events that correspond to different energy depositions in a MoNA bar, at energies between 18 and 32 MeV.

¹NSF PHY0555439, PHY0606007, PHY0354920

Joseph Finck
Central Michigan University

Date submitted: 19 Feb 2008

Electronic form version 1.4