

Abstract Submitted  
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**DIANA NaI-Detector Energy Calibration** KYLE O'CONNOR, University of Massachusetts-Dartmouth, DAVID ELOFSON, Bridgewater State University, CODIE LEWIS, ERIN O'BRIEN, James Madison University, KELSEY BUGGELLI, NEVIN MILLER, GRANT O'RIELLY, University of Massachusetts-Dartmouth, MAXTAGG COLLABORATION — The DIANA detector is being used for measurements of near threshold pion photoproduction and high-energy nuclear Compton scattering being performed at the MAX-lab tagged photon facility in Lund, Sweden. Accurate energy calibrations are essential for determining the final results from both of these experiments. An energy calibration has been performed for DIANA, a single-crystal, large-volume, NaI detector. This calibration was made by placing the detector directly in the tagged photon beam with energies from 145 to 165 MeV and fitting the detector response to the known photon energies. The DIANA crystal is instrumented with 19 PMTs, pedestal corrections were applied and the PMTs were gain matched in order to combine the readout value from each PMT and determine the final detector response. This response was fitted to the tagged photon energies to provide the final energy calibration. The calibrations were performed with two triggers; one from the detector itself and one provided by the photon tagger. The quality of the final calibration fit and the energy resolution of the detector,  $\sigma \approx 2.4$  MeV, will be shown.

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