

Abstract Submitted
for the DNP11 Meeting of
The American Physical Society

Optimizing fits of Geant4 simulations to measured gamma-ray spectra on a parallel computing cluster¹ MICHAEL AGIORGOUSIS — We have developed software to find the best fit between simulated and measured gamma-ray spectra, by varying the energies of the gamma rays and the lifetimes of the states that they de-excite. Using a grid search algorithm based on a chi squared analysis, we identify the energies and lifetimes that provide the best fit. Separate simulations of each energy lifetime pair must be run, each requiring a significant amount of computing resources, so we implemented the Ursinus College parallel computing cluster. The software can be used with simulations of any detector system, but in the present work, we consider Geant4 simulations of the CAESAR array at the NSCL.

¹Supported by NSF grant no. PHY-0969002.

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Date submitted: 24 Jul 2011

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