

Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Evaluation of the Scientific Capabilities of the AMEGO instrument REGINA CAPUTO, Univ of Maryland-College Park, AMEGO TEAM — The gamma-ray energy range from several hundred keV to a hundred MeV has remained largely unexplored since the observations by instruments on the Compton Gamma-Ray Observatory (1991- 2000) and on INTEGRAL (since 2002). This energy range is particularly challenging because it is firmly in the Compton-dominated regime where the interaction cross section is minimized. Accurate measurements are critical for answering a broad range of astrophysical questions. To address these questions, we are developing AMEGO: All-sky Medium Energy Gamma-ray Observatory, to investigate the energy range from 200 keV to >10 GeV with good energy and angular resolution and with sensitivity approaching a factor of 20-50 better than previous measurements. This instrument will be capable of measuring both Compton-scattering events at lower energies and pair-production events at higher energies. To achieve these ambitions goals Monte Carlo (MC) simulations will play a crucial role guiding the design of AMEGO. I will present an overview of the AMEGO scientific simulation campaign using the Medium-Energy Gamma-ray Astronomy library (MEGAlib) framework, as well as the initial results for effective area and angular resolution, as well as sensitivity projections.

Regina Caputo
Univ of Maryland-College Park

Date submitted: 12 Jan 2018

Electronic form version 1.4