

# Geant 4

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## Geant4 Simulation of Dynamitron Beam Uniformity and Energy Distribution

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The Dynamitron is a ~MeV electron beam accelerator at the Jet Propulsion Laboratory. A calibration of the machine was required after a retrofitting. Simulations using Geant4, detailing the electron particle accelerator, have been performed. Geant4 was used to determine beam uniformity and energy distribution at the target plate after passing through various scattering foils made of aluminum, titanium or copper with thicknesses ranging from 1-5mils. The model included a 0.4 inch diameter circular electron beam with different scattering foils placed in front of the beam tube window, 32.5 inches in front of the target plate. It implemented the 'Standard' EM physics model with initial beam energies of 1-2 MeV. The energy measurements were used for machine energy calibration tests and the beam uniformity was compared to measured results.

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