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Abstract

A Monte Carlo electron transport code was used to calculate the EMP sources produced (1) by monoenergetic electrons, (2) by a Compton scatter distribution of electrons, and (3) by a photoelectric scatter distribution of electrons. The effects of nuclear-coulomb electron scattering, of the continuous slowing down method of electron energy loss, and of electron turning in the geomagnetic field of the earth were included in the calculations. Analytic results were obtained from the source routine of AFWL one-dimensional high-altitude EMP code, HEMP B. Sources include an improved slowing down model and the option of two electron scatter approximations based on small angle scatter theory; one based on an average obiquity of the distribution, and the other based on a random selection of scattering direction. The Monte Carlo results are compared to the analytic methods for a delta function source of photons.
