

REPRODUCTION AND INTERPRETATION OF THE LARGE E⁺/E⁻ RATIO OBSERVED WITH AMS

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In the last ICRC, the AMS (Alpha Magnetic Spectrometer) group reported an unexpected result on the albedo electrons below the geomagnetic cutoff at a height of 380 km; the average ratio of e⁺/e⁻ is about 2 and it is dependent on the latitude. The ratio at low magnetic latitudes even reaches to 4. A semi-quantitative interpretation of this observation was given by one of the authors (Huang) using the east-west effect due to the geomagnetic field. In this paper, we report results of detailed Monte Carlo simulations (based on the Cosmos simulation code) to reproduce all the observed features and to interpret them.