ORIGIN OF LARGE ALBEDO POSITRON RATIO

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The Alpha Magnetic Spectrometer observed many particles below geomagnetic cutoff. These particles, known as the atmospheric albedo, are found to originate from the atmosphere and rebound to space. Surprisingly, the albedo positrons are more abundant than albedo electrons and their flux ratio varies with latitude. This ratio could be as high as 4 near magnetic equator and as low as 1 at high latitude. A model combining the secondary particles production and eastwest effect was proposed to explain the latitude dependence of the albedo positron electron ratio. The expected ratios are in good agreement with the measurements by AMS.