

Cockcroft Institute Seminar

The PAMELA anomaly: dark matter or a cosmic pevatron?

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Abstract

Recent observations of a positron excess in cosmic rays have been widely interpreted as a signature of dark matter annihilation or decay. However this can also arise due to a nearby supernova shock wave which is accelerating high energy particles by the Fermi mechanism. I will interpret the data from PAMELA, Fermi and HESS in the framework of the 'standard model' of galactic cosmic ray origin and propagation and discuss whether new physics is really needed.

(Refs: Phys.Rev.D80:123017,2009, Phys.Rev.Lett.103:081104,2009)