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New insights from old cosmic rays: A novel analysis of archival KASCADE data

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Cosmic ray data collected by the KASCADE air shower experiment are competitive in terms of quality and statistics with those of modern observatories. We present a novel mass composition analysis based on archival data acquired from 1998 to 2013 provided by the KASCADE Cosmic ray Data Center (KCDC). The analysis is based on modern machine learning techniques trained on simulation data provided by KCDC. We present spectra for individual groups of primary nuclei, the results of a search for anisotropies in the event arrival directions taking mass composition into account, and search for gamma-ray candidates in the PeV energy domain

Keywords

cosmic rays, machine learning, open data, anisotropy, pev gamma

Collaboration

other Collaboration

Subcategory

Experimental Results

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