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[302] Helium Flux Measurement with the DAMPE Detector using Machine Learning Techniques

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The Dark Matter Particle Explorer (DAMPE) is a satellite-borne experiment, in operation since 2015, aimed at studying high-energy gamma rays and cosmic nuclei fluxes. The detector system comprises a plastic scintillator detector for charge measurement, a silicon-tungsten tracker-converter for tracking incident particles, a bismuth-germanium oxide calorimeter for energy measurement and a neutron detector that further aids in hadron identification. Recently, machine learning (ML) techniques have been deployed with the aim of improving particle tracking and identification as well as compensating for the energy lost in the calorimeter at high incident energies due to saturation of the electronics. This work presents an updated helium flux after application of these ML techniques.

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