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Mass composition of Telescope Array's surface detectors events using deep learning

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The mass composition of ultra-high-energy cosmic rays can be analyzed by employing deep neural networks. We present an improved version of such analysis for Telescope Array's surface detectors data. Our neural network was trained on a large Monte-Carlo dataset simulating the expected experimental data distribution, and then was applied to the actual experimental data. Systematic and model errors are discussed.

Keywords

machine learning; neural networks; mass composition; ultra-high-energy cosmic rays

Collaboration

Telescope Array

other Collaboration

Subcategory

Experimental Results

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