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Classification of Cosmic Ray Components using Deep Learning Methods for LHAASO-KM2A

LHAASO-KM2A is a pivotal facility for studying cosmic rays through extensive air shower detection. However, accurately classifying cosmic ray components (e.g., protons, helium nuclei, and heavy nuclei) remains challenging due to overlapping shower signatures and background noise. In this proceeding, we propose a deep learning-based method to enhance the classification accuracy of cosmic ray components using KM2A simulation data. Current results demonstrate that the proposed method achieves a higher classification accuracy compared to the conventional method and former GNN approaches.

Collaboration(s)

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