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Random forest particle classification in high energy experiments

Content

Machine learning techniques are widely used in many research areas, especially in high energy physics. Here we use the Random Forests algorithm to reconstruct tracks, identify particles, as well as measure their basic properties, like transverse momentum in the environment of the MPD experiment.The results demonstrate a significant improvement, achieving classification purities exceeding 90% alongside a higher overall efficiency. This methodological optimization provide great tools to mitigate systematic fluctuations arising from particle misidentification, reaching high precision on measurements.

Summary

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