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Type: **Talk**

Machine learning based event reconstruction in Telescope Array surface detector

Wednesday, 2 February 2022 09:00 (45 minutes)

The surface detector of the Telescope Array (TA) experiment is the largest one in the northern hemisphere. We overview the machine learning based event reconstruction methods being developed by the TA collaboration. The key idea is to use full detector Monte Carlo simulation to obtain the raw detector signal as a function of the primary particle properties and to train deep convolutional neural network to model the inverse function. The above technique can be used to enhance the energy and arrival direction reconstruction for the individual events and to estimate the mass composition for an ensemble of events.

Type of Contribution

talk

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