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An IceTop Module for the IceCube MasterClass

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The IceCube MasterClass is an outreach project of the IceCube experiment at South Pole for 9th to 12th grade school students. The MasterClass is designed to provide an authentic astrophysics research experience by demonstrating typical elements of IceCube research. It is a full-day experience of engaging activities, educational talks, and scripted analyses, where students can reproduce the main science results of IceCube with real data.

Interactive applications are a central aspect of the analysis activities, which run directly in standard web browsers and offer students intuitive insights into data processing. This contribution describes a new analysis module which reproduces the measurement of the energy spectrum of cosmic rays with IceTop, the surface component of IceCube. The module features a web application that allows students to interactively fit representative IceTop events to recover the direction and size estimator S125 from the raw data. Data from the web application is processed with a simple spreadsheet application to compute the cosmic-ray flux, which can be compared to the official result.

Collaboration

IceCube

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