



Contribution ID: 105

Type: Poster

Extensive air shower simulation for the Telescope Array surface detector

Tuesday, 29 June 2010 16:30 (1 hour)

The history of ultra-high energy cosmic ray observation is now approaching 50 years. However, until quite recently, the full simulation of an extensive air shower was computationally impossible due to the vast quantity of daughter particles involved. However, with the advent of modern cluster computing, simulations that once would have taken years to complete can be done in a matter of hours or even minutes. Full shower simulations produced by a parallelization scheme employing the Karlsruhe Extensive Air Shower Simulation Code (CORSIKA) will be presented in conjunction with a “dethinning” technique that attempts to recover information lost by the CORSIKA statistical thinning algorithm. Detailed comparisons between simulated and real event sets will then be presented

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Session Classification: Poster Session I

Track Classification: Extensive air shower experiments