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A branching model for hadronic air showers

Thursday 30 July 2015 15:30 (1 hour)

We introduce a simple branching model for the development of hadronic showers in the Earth's atmosphere.
Based on this model, we show how the size of the pionic component followed by muons can be estimated.
Several aspects of the subsequent muonic component are also discussed.
We focus on the energy evolution of the muon production depth.
We also estimate the impact of the primary particle mass on the size of the hadronic component.
Even though a precise calculation of the development of air showers must be left to complex Monte Carlo simulations, the proposed model can reveal qualitative insight into the air shower physics.

Collaboration

– not specified –

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