

Executive summary

Arrival time distribution of muons from extensive air showers

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What is this contribution about?

Using Monte Carlo simulations to study muon distributions in extensive air showers.

Why is it relevant / interesting?

This study is relevant for the development of reconstruction methods using data of the upgraded detectors of the Pierre Auger Observatory.

What have we done?

We characterised muon production distributions in extensive air showers, compared their arrival time distribution at the observation level to an analytical description and used it to reconstruct the muonic profile in the atmosphere.

What is the result?

The analytical description agrees with the simulation data and we were able to use it to reconstruct the muonic profile in the atmosphere.