

Unfolding of the High-Energy Interactions in Extensive Air Showers

Monday 10 January 2022 11:40 (30 minutes)

In this talk, I will revisit our understanding of the air shower initiated by ultra high energy cosmic rays, focusing on the hadronic core and how macroscopic variables relate with the microscopic variables of the highest energy hadronic interactions therein. Many of those interactions occur at energies and phase-space regions beyond the reach of accelerator experiments. It will be shown how shower observables are being used to constrain hadronic models or directly probe particular aspects of the hadronic interactions. Special attention will be given to muons, which are direct messengers from the hadronic core of the air shower. The status and last advances of the so called “muon puzzle” on air showers will be reported as well as other related measurements.

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