

## Hadronic interactions at ultra-high energies

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The observation of ultra-high energy cosmic rays by the current leading air shower detectors, the Pierre Auger Observatory and the Telescope Array offer the unique possibility to study hadronic interactions at the highest energies. From the observation of the development of air showers in the atmosphere, for example, the experiments can determine the interaction cross section of protons at five times the LHC energy. Through the measurement of the muons produced in air showers additional hadronic properties can be estimated. An overview of the different measurements and their interpretation in terms of hadronic interaction will be presented.

### Relevant topics

Cosmic rays, hadronic interactions, muons, LHC, Pierre Auger Observatory, Telescope array

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