Contribution ID: **635** Type: **Parallel session talk**

Measurement of inelastic hadronic cross sections in space with DAMPE

Thursday 18 July 2024 11:20 (20 minutes)

The Dark Matter Particle Explorer (DAMPE) is an ongoing space-borne experiment for the direct detection of cosmic rays (CR). Thanks to its large geometric acceptance and thick calorimeter, DAMPE is able to detect CR ions up to unprecedented energies of hundreds of TeV. Following by now more than 8 years of successful operation, DAMPE has amassed a large dataset of high-energy hadronic interactions in a regime that is often difficult to probe by accelerator experiments. In this contribution, we show how DAMPE data can be used to measure inelastic ion-nucleon cross sections, and present a cross section measurement of both proton and helium on the BGO calorimeter. The phenomenological Aˆ2/3 and nuclear-radius scaling is then used to compare our measurements to existing accelerator data and other experimental results.

Alternate track

I read the instructions above

Yes

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