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## Testing hadronic interaction models with the attenuation length of muons in KASCADE-Grande

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Preliminary analyses of air-shower data from the KASCADE-Grande observatory have pointed out a possible discrepancy between the predicted and the measured values of the attenuation length of muons with energy threshold of 230 MeV at ground level in air showers. In particular, the analyses suggest that the measured muon attenuation length, as reconstructed with the constant intensity cut method, could be larger than the expected values from the QGSJET-II-2, QGSJET-II-04, SIBYLL 2.1 and EPOS 1.99 hadronic interaction models for showers with energies between  $10^{16.3}$  and  $10^{17.3}$  eV. In this contribution, we investigate the aforementioned anomaly using a more detailed analysis than in previous works. The study involves the identification and the calculation of the most relevant systematic uncertainties affecting both measurements and simulations. From the results of this analysis, we show that the predictions from the modern high-energy hadronic interaction models on the muon attenuation length are not statistically consistent with the measured value at KASCADE-Grande.

### Collaboration

KASCADE-Grande

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