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The study of the longitude development of muons in air shower

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The longitude development of the muonic component in the extensive air shower can help to determine mass composition of cosmic rays. By using the timing information of muons, the production positions of muons can be reconstructed . X_maxˆμwhich is the position with muon production reaching maximum is sensitive to the mass composition of cosmic rays. In this paper, the reconstruction of muon’ s geometrical production heights along the shower axis by using their timing information are studied for cosmic rays with energies from 1PeV to 10 PeV by CORSIKA data

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Cosmic rays

Summary

According to our analysis, the resolution of X_maxˆμ is 453.6 g/〖cm〗ˆ2 with a resolution about 11.46g/〖cm〗ˆ2 for showers initiated by protons with energy 10 PeV ,and zenith angle θ=〖45〗ˆ°

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