

The all-particle cosmic ray energy spectrum measured with HAWC

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Content

Thanks to recent technological development, a new generation of air shower experiments, such as HAWC, have been developed in order to study the TeV gamma ray sky with improved sensitivity. Due to its design, these instruments can also provide indirect data from primary cosmic rays in the TeV energy interval, in particular, in the region which defines the frontier between the direct and indirect cosmic ray detection. In this context, we present an updated study of the all-particle cosmic ray energy spectrum using data from the HAWC gamma-ray and cosmic-ray observatory. Two years of HAWC's data were analyzed and the Bayes unfolding method was applied to reconstruct the all-particle energy spectrum of cosmic rays from 10 TeV to 1 PeV. The result confirms the presence of a knee like feature at tens of TeV, as previously reported by the HAWC collaboration in 2017.

Summary

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