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Measurement of Cosmic Rays with LOFAR

Tuesday 12 June 2018 17:30 (30 minutes)

We give an update on the mass composition of cosmic rays between 10^{17} and $10^{17.5}$ eV measured by the LOFAR radio telescope. By matching observations with two-dimensional radio intensity footprints simulated with Corsika/CoREAS we reconstruct X_max with a resolution of $\sim$20 g/cm^2.
We present improvements that were introduced in the reconstruction pipeline and their implications for the composition analysis. Most importantly, systematic uncertainties due to variations in the atmopshere have been reduced by using realistic atmospheric profiles from the GDAS (Global Data Assimilation System) database.

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