ICRC2015

ICRC
The Astroparticle Physics Conference
34th International Cosmic Ray Conference
July 30 - August 6, 2015
The Hague, The Netherlands

Contribution ID: **766** Type: **Poster contribution**

The cosmic-ray energy spectrum above $\sim 10^{16}$ eV measured with the LOFAR Radboud Air Shower Array

Saturday, August 1, 2015 3:30 PM (1 hour)

The LOFAR Radboud Air Shower Array (LORA) is an array of 20 plastic scintillation detectors installed in the center of the LOFAR radio telescope in the Netherlands to measure extensive air showers induced by cosmic rays in the Earth's atmosphere. The primary purpose of LORA is to trigger the read-out of the LOFAR radio antennas to record radio signals from air showers, and to assist the reconstruction of air shower properties with LOFAR by providing basic air shower parameters such as the position of the shower axis on the ground, the arrival direction and the energy of the incoming cosmic ray. In this contribution, we will describe the various steps of data analysis and Monte-Carlo simulation involved in the energy reconstruction of air showers measured with LORA, and present the all-particle cosmic-ray energy spectrum above $\sim 10^{16}$ eV reconstructed for the two extreme scenarios: pure protons and iron nuclei.

Collaboration

– not specified –

Registration number following "ICRC2015-I/"

666

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Session Classification: Poster 2 CR

Track Classification: CR-EX