ICRC2015

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

Contribution ID: **977** Type: **Oral contribution**

A lateral distribution function for the radio emission of air showers

Monday, August 3, 2015 11:30 AM (15 minutes)

The international LOFAR radio telescope has been used now for four years to detect air showers. Its high antenna density has allowed us to measure the subtle
features of the radio emission of air showers. Together with air shower simulations, these data have been used to model the detected signals. The not rotational symmetric footprint is described by an analytical function with as few as four free parameters. The parameters are related to the
position of the shower axis, the energy and the distance to the shower maximum. We will show how this parametrization is used for a fast reconstruction of all relevant air shower parameters and what accuracies are obtained in comparison to a full Monte Carlo simulation.
We will furthermore elaborate on the absolute scale of our measurements and the predicted signal strengths.

Collaboration

– not specified –

Registration number following ”ICRC2015-I/”

471

Primary author: NELLES, Anna (Radboud University Nijmegen)

Co-authors: CORSTANJE, Arthur (Radboud University Nijmegen); HEINO, Falcke (Radboud Univeristy); TRINH, Gia (KVI-CART, University of Groningen); Mr ENRIQUEZ, J.E. (Radboud University); HÖRANDEL, Jörg (Ru Nijmegen/Nikhef); RACHEN, Jörg P. (Radboud University); ROSSETTO, Laura (Radboud University); SCHOLTEN, Olaf (University of Groningen); SCHELLART, Pim (R); TER VEEN, Sander (Radboud University); THOUDAM, Satyendra (Radboud University); BUITINK, Stijn (Vrije Universiteit Brussel (VUB)); KARSKENS, Tijs (Radboud University)

Presenter: NELLES, Anna (Radboud University Nijmegen)

Session Classification: Parallel CR12 Radio

Track Classification: CR-EX