

Abstract number: S4-488

4. High energy cosmic rays (HE-CR I)

## **Confronting EPOS-LHC predictions for the muon content of high-energy EAS with the KASCADE-Grande measurements**

Arteaga-Velazquez, JuanCarlos<sup>1</sup> and the KASCADE-Grande Collaboration, \*

<sup>1</sup>Institute of Physics and Mathematics, Universidad Michoacana

KASCADE-Grande was an air-shower experiment designed to study cosmic rays between  $10^{16}$  and  $10^{18}$  eV. The instrument was located at the site of the Karlsruhe Institute of Technology, Germany at an altitude of 110 *m* a.s.l. and covered an area of  $0.5 \text{ km}^2$ . KASCADE-Grande consisted of several detector systems dedicated to measure different components of the EAS generated by the primary cosmic rays, i.e. the muon and the electron contents of air-showers, with high precision. By combined analyses of the measured EAS observables, the data collected by KASCADE-Grande can be used not only to study in detail the properties of cosmic rays but also to test the predictions of high-energy hadronic-interaction models. In this work, the EPOS-LHC hadronic-interaction model is tested. In particular, predictions of CORSIKA/EPOS-LHC for the muon densities and the muon-number attenuation length in the atmosphere are confronted with the measurements of the KASCADE-Grande experiment at energies from  $\approx 10^{16}$  to  $10^{17}$  eV.