

22nd International Symposium on Very High Energy Cosmic Ray
Interactions (ISVHECRI 2024)

Contribution ID: 65

Type: **Invited**

**NA61/SHINE is a fixed target experiment designed to
study hadron-hadron interactions at the CERN
Super-Proton-Synchrotron**

Wednesday 10 July 2024 09:00 (30 minutes)

In this contribution we will present final results on production spectra in pion-carbon interactions, which are of fundamental importance to improve the extensive air shower modeling, and hence the interpretation of ultra-high-energy-cosmic-rays measurements. In particular, our measurements of (anti)baryons and ρ^0 production in pion-carbon interactions will contribute to improve the predictions of muon production by air shower simulations using hadronic interaction models. Moreover, we will give an overview on available rich variety of measurements of hadronic interactions with NA61 at beam energies from 13 to 400 GeV, with proton, pion and kaon projectiles on proton and nuclear target, as well as nucleus-nucleus collisions. Furthermore, we will discuss future measurements of nuclear fragmentation with NA61/SHINE, mostly of interest for Galactic cosmic-ray studies, but with some relevance for modeling fluctuations in air showers.

Presenter: ENGEL, Ralph (Karlsruhe Institute of Technology)

Session Classification: Invited talks