Ultra High Energy Cosmic Rays 2018



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Recent results from the LHCf experiment

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The LHCf experiment aims for measurements of the forward neutral particles at an LHC interaction point to test hadronic interaction models which are widely used in cosmic-ray air-shower simulations. The LHCf had an operation with proton-proton collisions at the center of mass collision energy of 13 TeV in 2015. The LHCf detectors were composed of sampling and imaging calorimeters and they were installed at both sides of the ATLAS interaction point. We have measured the energy spectra of very forward photons and neutrons and these results will be reviewed in the presentation.

We also performed a joint analysis with the ATLAS experiment to measure the contribution of diffractive interactions on the forward photon production. In additions to operations at LHC, we had an operation at BNL-RHIC with proton-proton at 510 GeV collision energy to evaluate the energy scaling of forward particle production. These activities will be introduced in the presentation also.

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