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Status and Prospects of the LHCf experiment

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Precise knowledge of high energy hadronic interaction is an important key to understand air shower development. The LHCf experiment measures neutral particles such as photons, neutral pions, and neutrons, produced in the very forward region of LHC collisions, which contribute to the air shower development. Since the LHC start, LHCf performed many operations with pp collisions at several collision energies from 0.9 to 13.6 TeV and pPb.

The last and most important operation of LHCf, with proton-oxygen collisions which is an ideal condition to study interactions between high-energy cosmic-rays and atmospheric nucleus, will be performed in July 2025, just before this conference. The LHCf-Arm2 detector will be installed in the proton remnant side, and approximately 100 M events are expected to be recorded in 2 days of data taking together with ATLAS. We will report prospects and flesh news of this operation as well as current analysis activities using data obtained in the past.

Collaboration(s)

LHCf

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