



Contribution ID: 39

Type: **not specified**

LHCf motivations and prospects of p-O collisions

Wednesday, February 10, 2021 2:45 PM (25 minutes)

A proton-oxygen run at the LHC would be a unique opportunity to reproduce the collision of a cosmic ray with a light nucleus of the atmosphere. The LHCf experiment will have the possibility to perform direct measurements of the very-forward neutral particle production and the nuclear modification factor without the need of an interpolation of the results in proton-proton and proton-lead collisions. Another advantage of p-O collision is the much smaller contribution of Ultra Peripheral Collisions to the particle production with respect to the p-Pb case, which will lead to more precise measurements for the tuning of the phenomenological hadronic interaction models. LHCf will be able to operate both on the p-remnant and O-remnant side with a dedicated low-luminosity run. A common operation with the ATLAS ZDC is also under discussion.

Presenter: TIBERIO, Alessio (Universita e INFN, Firenze (IT))

Session Classification: pO for cosmic-ray physics