



Contribution ID: 54

Type: **not specified**

32-Can QGP be produced in the interaction of UHECRs with Earth's atmosphere?

Wednesday 16 February 2022 17:29 (11 minutes)

Ultra-High Energy Cosmic Rays interact with the Earth's atmosphere producing *Extensive Air Showers* at very high energies, which are not accessible at the LHC. But the data that we have collected over the years from measurements of these air showers shows us an inconsistency in the number of muons, regarding the hadronic models we have been using so far. This is known as the *Muon Puzzle*. Recent experiments with heavy ions at the LHC have unravelled a new state of matter, called *Quark-Gluon Plasma*, which has been studied through models like the EPOS-LHC. However, this model was insufficient and so it was modified in order to phenomenological explain the muon excess that had been observed, originating the *EPOS-QGP*. The goal of this project is to use this new model to assess if quark-gluon plasma can be formed not only at LHC energies but also in the extensive air showers of cosmic rays.

Author: ARTUR, Beatriz (IST)

Presenter: ARTUR, Beatriz (IST)