



Contribution ID: 28

Type: **not specified**

## **Atmospheric monitoring at the Pierre Auger Observatory and effects of aerosol attenuation on UHECR detection**

*Wednesday, 13 July 2022 12:30 (30 minutes)*

The Pierre Auger Observatory is detecting ultra-high energy cosmic rays (UHECR) since the early 2000s years in the Pampa Amarilla, Argentina. It is composed of different detection techniques which requires the monitoring of several aspects of atmospheric conditions along with the UHECR detection. We are presenting the multitude of atmospheric monitoring devices and their application in air shower reconstruction at the Pierre Auger Observatory. Special emphasis is put on the measurement of the aerosol attenuation of fluorescence light in the atmosphere. The temporal variability of aerosols is discussed together with the impact on air shower reconstruction. The effect of the use of average fixed aerosol attenuation is presented, in comparison to use of hourly measurements.

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**Session Classification:** The influence of the atmosphere on the measurements of present and future UHECR and Gamma-Ray experiments