



Contribution ID: 218

Type: **Poster Presentation**

Cosmic Ray Extremely Distributed Observatory: status and perspectives

Saturday 7 July 2018 18:00 (30 minutes)

The Cosmic-Ray Extremely Distributed Observatory (CREDO) is a project dedicated to global analysis of extremely extended cosmic-ray phenomena, so-called cosmic ray ensembles (CRE), beyond the capabilities of existing detectors and observatories. Up to date cosmic-ray research has been focused on detecting single air showers, while the search for ensembles of cosmic rays, which can even cover a significant fraction of the Earth, is a scientific terra incognita. Instead of development and commissioning a completely new global detector infrastructure, CREDO proposes approaching the global cosmic-ray analysis objectives with all types of available detectors, from professional to pocket size, merged into a worldwide network. One of the observables that can be investigated in CREDO is a number of spatially isolated events collected in a small time window which could shed light on fundamental physics issues. The CREDO mission and strategy requires active engagement of a large number of participants, also non-experts, who will contribute to the project by using common electronic devices (e.g. smartphones). CREDO participants can get engaged also on the analysis level, mainly in a citizen science format, by classifying CREDO images, also those collected by their private devices, to feed and train the pattern recognition algorithms. In the talk we will show the status and perspectives of the project.

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Session Classification: Physics Education and Outreach