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Invitation to the Cosmic Ray Extremely Distributed Observatory

Tuesday, 4 June 2024 10:00 (20 minutes)

The Cosmic Ray Extremely Distributed Observatory (CREDO) is an international scientific programme dedicated to global studies of yet not observed extremely extended cosmic-ray phenomena, the cosmic-ray ensembles (CRE), possibly beyond the reach 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 may spread over a significant fraction of the Earth, is a scientific terra incognita. The key idea of CREDO is to combine existing cosmic-ray detectors (large professional arrays, educational instruments, individual detectors, such as smartphones, etc.) into a worldwide network, thus enabling a global analysis. Our global approach to cosmic ray research is also envisaged to universally serve for other, even yet not defined interdisciplinary studies and missions where large scale cosmic ray effects might play a role. A recent example of such efforts is the observation of the precursor-like correlations between low energy cosmic radiation and eartquakes considered on globally. An interpretation of this unexpected phenomenon is presently the first and the most promising scientific priority of the CREDO Collaboration. An important characteristic of the whole CREDO programme is its openness and inclusiveness dicated by the purely scientific requirement of the widest possible area of reserach, both in terms of sensors and manpower, on different levels. In other words the CREDO Collaboration aims at engaging a large number of participants (not only professionals but also, or even mainly, citizen scientists), assuring the geographical spread of the detectors and hands necessary to deal with vast amount of data to search for evidence for cosmic-ray ensembles and, possibly, other exciting, large scale, multi-channel phenomena.

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