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Modular Cosmic Ray Detector (MCORD) and its potential use in various physics experiments, astrophysics and geophysics.

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As part of the collaboration building a set of detectors for the new collider, our group was tasked with designing and building a large-scale cosmic ray detector, which was to complement the capabilities of the MPD (Dubna) detector set. The detector was planned as a trigger for cosmic ray particles and to be used to calibrate and test other systems. Additional functions were to be the detection of pairs of high-energy muons originating from some particle decay processes generated during collisions and continuous observation of the cosmic muon stream in order to detect multi muons events. From the very beginning, the detector was designed as a scalable and universal device for many applications. The following work will present the basic features and parameters of the Modular COsmic Ray Detector (MCORD) and examples of its possible use in high energy physics, astrophysics and geology. Thanks to its universal nature, MCORD can be used as a fast trigger, neutron veto detector, muon detector and as a tool in muon tomography.

Footnotes

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