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The Carpet-3 EAS array: a current status

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The Carpet-3 extensive air shower array is now under construction at the Baksan Neutrino Observatory. The array is located at an altitude 1700 meters above sea level, and it consists of surface detection stations, situated close to each other for best sensitivity to extensive air showers with lower energy, and of an underground muon detector with a continuous area of 410 sq. m. The energy threshold for vertical muons is 1 GeV. The main aim of the array is to study the primary gamma radiation with energy above 100 TeV. After the final accomplishment of this array, it can be competitive in its class and will have a chance to get one of the world-best limits on the diffuse flux of cosmic gamma rays. The design of the Carpet-3 EAS array gives a possibility to carry out research on the composition of primary cosmic rays around the knee. It is planned that the Carpet-3 EAS array will be in full operation by the end of 2021. An overview of the current state of the experiment is presented, and its prospects are discussed.

Keywords

Gamma-ray; experiment; Carpet-3; air-shower detector

Collaboration

other Collaboration

Carpet-3 Collaboration

Subcategory

Experimental Methods & Instrumentation

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