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Search for coincident air showers over large scale distances with the EEE network

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The existence of time correlations in detectors separated by distances much larger of the size of the highest energy extensive air showers (EAS) has been long discussed over the years. Several mechanisms have been proposed to justify the existence of such events and, in the last decade, some experiments have also tried to search for correlations on a large scale distance, beyond one hundred kilometers. The approaches were based on the construction of clusters of telescopes placed at large relative distances, with the capability of selecting extensive air showers.
Within this context, the Extreme Energy Events (EEE) experiment can provide new inputs in the research of long distance correlations, thanks to its sparse array of muon telescopes distributed in several sites and spanning all the Italian territory.
The EEE telescopes are taking data since more than 10 years and enough statistics has been already accumulated to be able to search for such events, whose observation is intrinsically difficult due to the very low rates involved, many order of magnitudes smaller than the overall cosmic ray flux. In order to reduce the accidental correlations, different analysis approaches have been investigated for the selection of EAS events with the EEE telescopes. In this contribution we will present some few interesting correlation events obtained by analyzing most of the statistics
currently available, corresponding to an overall period of about 4000 days time exposure.

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