Contribution ID: **10** Type: **not specified**

EEE project - Science in schools: state and results

The Extreme Energy Events Project is an extended array for Cosmic Rays survey, conceived by Antonino Zichichi and supported by the Study and Research Centre "Enrico Fermi"(Rome) with the collaboration of the European Organization for Nuclear Research (CERN), of the Italian National Institute of Nuclear Physics (INFN) and of the Italian Ministry of Education, University and Research (MIUR). The experiment is aimed to study Cosmic Rays of extreme high energy, and related phenomena, combining rigorous experimental research of the phenomenon with the involvement and collaboration of students and teachers of the high schools, where the detectors are installed.

The detectors are telescopes consisting of three MRPCs (Multigap Resistive Plate Chamber) of about 2 m2, positioned in overlaid planar configuration and constructed by the students at CERN. These devices provide the three space-points needed to reconstruct the tracks of the secondary muons produced by primary Cosmic Rays; the spatial resolution is of the order the centimeter and the time resolution is about 100 picoseconds. These telescopes are part of a network of nearly 50 telescopes, distributed throughout the Italian territory both as single stations that as clusters of 2-3 telescopes in the same city. They are synchronized between each other by means of GPSs. Since 2014, the data of all the stations are sent and stored at CNAF (Bologna), the national center of informatics and telematics technologies of the INFN.

In May 2016, the second coordinated national RUN will be accomplished, with almost 25 billion muon tracks reconstructed. This huge amount of data, allows us to carry out various studies: the dependence of the local muon flux with solar activity; the sky anisotropy on sub-TeV scale; possible event correlations due to EAS between clustered stations at distances from a few hundred meters to over a kilometer.

The status of the project and some results will be presented.

Primary author: Dr GRAZZI, Stefano (Study and Research Centre "Enrico Fermi"(Rome))

Presenter: Dr GRAZZI, Stefano (Study and Research Centre "Enrico Fermi"(Rome))