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Cosmic Ray Observatories in Mexico City and the top of the Sierra Negra volcano

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Content

Since 1990, the cosmic ray observatory of Mexico City (2274 m a.s.l.) has been operating continuously. This observatory is composed of a neutron monitor (6-NM64) and a muon telescope, capable to detect the hadronic and hard components of the secondary cosmic radiation. The 6-NM64 is the only Latinamerican neutron monitor that belongs to the neutron monitor database.
In 2003, the solar neutron telescope (SNT) was installed at the top of the Sierra Negra volcano (4580 m a.s.l.), the SNT detects accelerated neutrons in solar flares and the background of galactic cosmic rays. This detector is part of the worldwide network of SNTs. In 2014, a new kind of detector was installed next to the SNT, the scintillator cosmic ray telescope (SciCRT), this new telescope can detect solar neutrons, muons and the background of galactic cosmic rays. The Sierra Negra cosmic ray observatory is mainly composed of the SNT and the SciCRT.

In this talk, we will present a description of the four detectors, as well as their operation; in addition, we will present the most significant results in the study of low energy cosmic rays and the numerical simulations carried out to understand and analyze the registered data by the observatories.

Summary

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