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Science Objectives of the JEM EUSO mission on International Space Station

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Abstract content

JEM-EUSO space observatory will have a very large exposure factor in several years, which is far exceeding the critical exposure factor required for observation of most of the sources within a few hundred Mpc. The main science objective is the source identifying astronomy in particle channel. Quasi-linear tracking of the sources becomes feasible at energy $> 10^{20}$ eV for all-sky. Acceleration mechanism may be studied by the energy spectra of individual multiplets and that of all particles. In addition, JEM-EUSO has three exploratory test observations: (i). extremely high energy neutrinos, beginning at $E > 10^{19}$ eV: neutrinos at such high energies are expected to have an increased cross section in the Standard Model, and in particular, in extra-dimension models, characterizable by their possible detection or failure. (ii). fundamental physics at extreme energies at several decades higher than the Super LHC (Large Hadronic Collider) energies, (iii). global atmospheric observation, including large-scale and local plasma discharges, night-glow, meteorites, and others.

If this papers is presented for a collaboration, please specify the collaboration

The JEM-EUSO Collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 5 (HE part 2), pages 1145-1148

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