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## The JEM-EUSO Program

*Thursday, 16 April 2015 14:00 (1 hour)*

JEM-EUSO on board the International Space Station is a mission that aims at unveiling the nature and the origin of the ultra high energy cosmic rays (UHECRs), and to address basic problems of fundamental physics at extreme energies. The instrument is designed to measure the arrival direction, the energy and, possibly, the nature of these particles. It basically consists of a wide-field of view telescope that looks down from the International Space Station during night-time to detect UV photons emitted from air showers generated by UHECRs in the atmosphere, in order to identify their individual sources and their association with known nearby astronomical objects. An infrared camera and an atmosphere monitoring system improve the performance of the instrument. The program is proceeding in different steps. At present, K-EUSO attached at the Russian module of the ISS, an improvement of KLYPVE experiment already approved by Roscosmos, is in the stage of final definition. Two pathfinders have already been developed, the first, EUSO-Balloon flew on board a stratospheric balloon in August 2014, a second, EUSO-TA on ground, is in operation at the Telescope Array site. A third, Mini-EUSO, approved by Roscosmos, will be installed inside the ISS. More short and long duration balloon flights are envisaged. 17 Countries, and about 300 researchers are collaborating in JEM-EUSO.

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