

Status and results of the LAZIO-Sirad and Sileye-3/Ateino experiments on board the International Space Station

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In this contribution we will discuss the status and performances of the LAZIO-Sirad and Sileye-3/Ateino detectors on board of the International Space Station. Both devices were operations in April 2005 during the recent Italian Soyuz Mission. LAZIO-Sirad is a 30 kg cosmic ray detector employing four silicon microstrip detectors triggered by scintillators. It also includes 16 Silicon Photomultipliers (SiPM) detectors, used for the first time in space with technological purposes. Also a one-axis magnetometer was employed to monitor the magnetic environment on board the station. Data acquisition was performed using a Linux-based PC-104 standard CPU; storage was done on PCMCIA cards.

We will also describe future work involving operations with Sileye-3 in the framework of ESA Long Duration Mission to monitor the radiation environment and effectiveness of shielding on board the ISS. During the first measurement campaign – which will last for 6 months - Sileye-3 will make measurements without shielding and with polyethylene shielding blocks in three different locations of the station. Further measurements will include the use of other shielding materials and measurements in additional locations.