

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Radiation Effects and Risks in Human Space Missions (4)

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RADIATION DOSIMETRY ACTIVITIES IN EUROPE

Abstract

Risk from exposure to ionizing radiation is determined from the level of the exposure in the different organs taking into account the radiobiological quality of the radiation field and the radiosensitivity of the organs. Accurate measurements of the radiation exposure are therefore one of the prerequisites for precise risk estimation. The determination of the radiation load on astronauts as well as confident measurements of the radiation field parameters onboard the International Space Station (ISS) and beyond with active and passive detectors is a challenging and demanding tasks taking into account the limitations in mass, dimensions, power consumption and data transmission for the instruments. For the physical measurements the determination of organ doses using anthropomorphic phantoms results in benchmark data for radiation transport codes aiming towards a better radiation risk assessment. The talk will first focus on an overview of the current and future planned European radiation experiments performed on board the ISS and beyond.