

Keynote Address: Exploration Missions and Radiation – How We Tackle the Problem with the MARE Experiment on ORION EM-1 Mission

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The space radiation environment and related higher radiation exposure to humans in space has been recognized as one of the main health detriments for long duration human space missions. The upcoming ORION missions to the Moon and plans for a journey to MARS, require ways to measure and/or simulate the radiation exposure on a crew. These measurements will be the prerequisite for mission planning and relevant risk assessment. For the upcoming ORION EM-1 mission, the MARE [Matroshka AstroRad Radiation Experiment], is a joint effort of LHM, NASA, ISA, DLR and StemRad. The experiment consists of two female phantom torsos and the AstroRad vest. The AstroRad vest is a radiation shielding Personal Protection Equipment (PPE) for Astronauts developed and manufactured by StemRad Ltd. The talk will highlight the idea behind the project and open questions still to be resolved for exploration missions.

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