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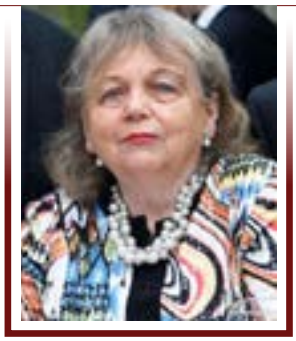

Susan McKenna-Lawlor[1, 2]

[1]Space Technology Ireland Ltd., Ireland

[2]Maynooth University, Ireland

ENERGETIC PARTICLE POPULATIONS POTENTIALLY ENCOUNTERED IN THE COURSE OF HUMAN SPACE MISSIONS AND RECENTLY EMERGING STRATEGIES TO MITIGATE AGAINST THE DELETERIOUS EFFECTS THEY CAN PRODUCE

The main sources of energetic particle populations potentially encountered by human crews in Low Earth Orbit (LEO) and beyond (BLEO) are described, and the health hazards these particles pose to mission personnel, as well as the damage they may, in addition, cause to space vehicles/their operations are outlined. New knowledge of the space environment, relatively recently gained through the development of various methodologies to provide greater insight into the underlying physics is presented and strategies to mitigate against certain of the deleterious effects potentially brought about by energetic particle radiation in space are discussed.

BIOGRAPHY

Susan McKenna-Lawlor, since founding her company Space Technology Ireland Ltd. in 1985, she provided scientific instrumentation for flagship missions successfully launched by ESA, NASA and the Space agencies of China, India and Russia among the targets of these missions have been: Exploration of the Moon, Earth, Mars, Venus, comets and asteroids. During this year her group contributed to the payload of the BepiColombo mission jointly launched to Mercury by ESA and the Japanese Space Agency JAXA. She is the lead/ contributing author of over 200 refereed scientific and technical papers, as well as of a number of books, among which "THE ENERGETIC PARTICLE RADIATION HAZARD EN ROUTE TO AND AT MARS" was awarded in 2018 the Basic Sciences Book Award of the International Academy of Astronautics.

stil@mu.ie