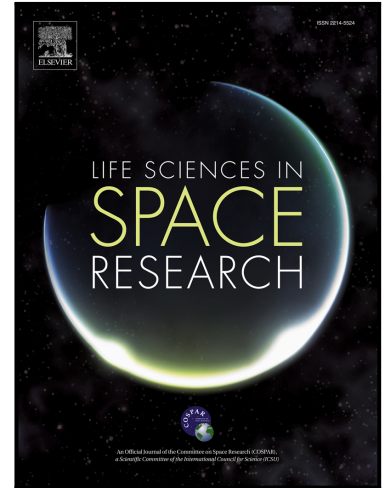


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Dynamical Modeling Approach to Risk Assessment for Radiogenic Leukemia among Astronauts Engaged in Interplanetary Space Missions

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ABSTRACT

A recently developed biologically motivated dynamical model of the assessment of the excess relative risk (ERR) for radiogenic leukemia among acutely/continuously irradiated humans (Smirnova, 2015, 2017) is applied to estimate the ERR for radiogenic leukemia among astronauts engaged in long-term interplanetary space missions. Numerous scenarios of space radiation exposure during space missions are used in the modeling studies. The dependence of the ERR for leukemia among astronauts on several mission parameters including the dose equivalent rates of galactic cosmic rays (GCR) and large solar particle events (SPEs), the number of large SPEs, the time interval between SPEs, mission duration, the degree of astronaut's additional

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