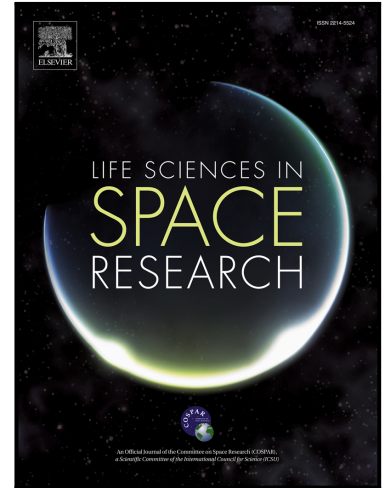


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Olga A. Smirnova , Francis A. Cucinotta

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

Olga A. Smirnova*, Francis A. Cucinotta**

*Federal State Unitary Enterprise Research and Technical Center of Radiation-Chemical Safety and Hygiene, Moscow, Russian Federation

**Department of Health Physics and Diagnostic Sciences, University of Nevada, Las Vegas, NV, United States of America

Corresponding Author:

Professor Francis A. Cucinotta

University of Nevada, Las Vegas

Department of Health Physics and Diagnostic Sciences,

4505 S. Maryland Parkway

Box 453037

Las Vegas, NV 89154-3037

Office: 702 895-0977

E-mail address: francis.cucinotta@unlv.edu

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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