

Research Topic

Astroparticle Experiments to Improve the Biological Risk Assessment of Exposure to Ionizing Radiation in the Exploratory Space Missions

 **frontiers**
in Astronomy
and Space Sciences

The actual and next decade will be characterized by an exponential increase in the **exploration of the Beyond Low Earth Orbit space (BLEO)**. In this context, a detailed space radiation field characterization will be crucial to optimize radioprotection strategies to assess the risk of the health hazard related to human space exploration and to reduce the damages potentially induced to astronauts from galactic cosmic radiation.

On the other side, **since the beginning of the century, many astroparticle experiments** aimed at investigating the unknown universe components have been collecting enormous amounts of data regarding the cosmic rays (CR) components of the radiation in space.

Such experiments are actual cosmic ray observatories, and the collected data (cosmic ray events) **cover a significant period of time, measuring in large energy windows and in the full range of the CR components and their radiation quality**. The collected data contains valuable information that can enhance the space radiation field characterization and, consequently, improve the radiobiology issues concerning the human space exploration.

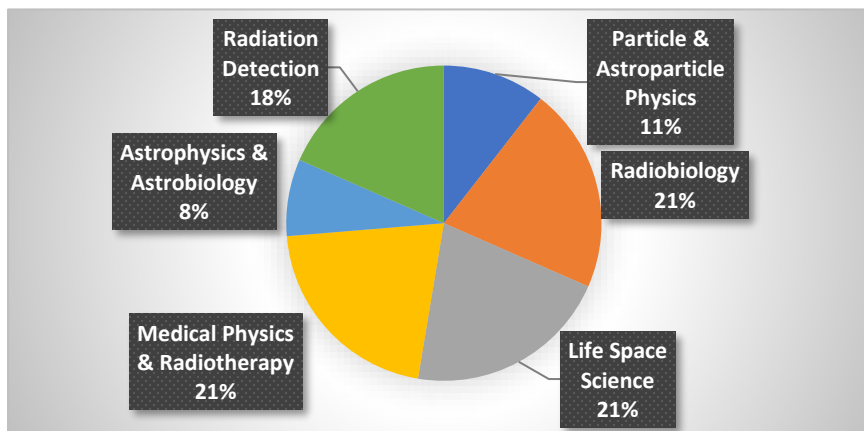
The research topic initiative was launched in

November 2021

- > 1500 views (topic & articles)
- > 20 expected contributions
- > 5 abstracts received
- 1 published manuscript

Open for articles submissions !

Contributors from different research areas



Topic Editors

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Frontier Detectors for Frontier Physics

15th Pisa Meeting on Advanced Detectors

May 22 – 28 2022 • La Biodola, Isola d'Elba (Italy)