
Cosmic Radiation Detection and Dosimetry

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Résumé

Our planet is permanently impinging by Cosmic Radiation (CR), mainly composed of high energy charged particles (proton and heavier nuclei). Our planet is protect by the interplanetary magnetic field, the earth magnetosphere and as last barrier by our atmosphere. CR is a serious limiting factor for space travel. Without the protection of the Earth's magnetosphere, crew of space mission may receive dose being sufficiently high to induce temporary or permanent health disease and in case of intense solar energetic particle events, doses incapacitate the crews or reach lethal level. Under our magnetosphere and atmosphere, CR, the received doses are lower, but significant high to be monitor with the aim to keep it under legal limit (for astronauts and aircrew). Aircrew of commercial long-haul flight are in average more exposed than worker of Nuclear power plants. In this lecture impact and risks of CR, from the human protection point of view will be discussed. Measurements of CR required specific instrumentation due diversity of particles and large range of energy. Principles and methods of measurements of CR will be reviewed and detailed in this lecture. A radiation detector will be built, tested and evaluated during the session.

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