

Comparison of Cosmic Radiation Detectors in the Radiation Field at Aviation Altitudes

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Abstract

An assessment of the exposure of aircrew and passengers to the complex radiation field at aviation altitudes has been a challenging task and a legal obligation in the European Union for many years. The response of several radiation measuring instruments to this radiation field was investigated by different European research groups within the framework of the CONCORD campaign (ComparisoN of Cosmic Radiation Detectors) in the Radiation Field at Aviation Altitudes. We measured dose rates at four positions in the atmosphere in European airspace, two altitudes at two locations respectively, under quiet space weather conditions during joint measuring flights with the twin-jet research aircraft Dassault Falcon 20E operated by the DLR flight facility Oberpfaffenhofen. The results show a very good agreement between the readings of the instruments of the different research groups as well as for the comparison of the corresponding average values with PANDOCA model calculations.

Space Weather Workshop, 25.-29.4.2016

Broomfield, CO,

Vortrag, 29.4.2016, 11:20 MT

Eingeladen