Contribution ID: **23** Type: **not specified**

Physics models for the simulation of biological effects of radiation and shielding with the Geant4 toolkit: the ESA AO6041 project

Wednesday, 18 August 2010 15:00 (20 minutes)

The European Space Agency is supporting the extension of the Geant4 general purpose Monte Carlo simulation toolkit for the modeling of biological effects of radiation at the DNA and cellular scales for space applications, in the framework of the ESA AO6041 project. In this talk, we will describe the context of this research project and overview on-going developments. These developments include new Geant4 Physics and Chemistry processes and models as well as the simulation of the radiation environment aboard the International Space Station, following the outcome of the ESA DESIRE project. The preparation of an irradiation campaign of biochip samples aboard the ISS for the search of traces of life in the Solar System (exobiology) will also be presented.

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Session Classification: Plenary session III - Aparatus simulation -