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Geant4 modeling of radiation exposure in ultra-long-haul flights: a proposal

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A few commercial airlines now operate ultra-long-haul flights from Asia to America. Recent concerns have been raised related to the dose exposure of crews on these high latitude routes which fly close to the North Pole. We present in this talk a proposal to model with Geant4 the radiation environment encountered in such ultra-long-haul flights. This includes the modeling of the interaction of galactic and solar cosmic rays with the Earth's magnetosphere and atmosphere and the interaction of the resulting flux of secondary radiation with the aircraft itself. In order to perform this study technical information from commercial aircraft manufacturers would be required.

Primary author: Dr INCERTI, SEBASTIEN (CNRS/IN2P3)

Co-author: Dr DESORGHER, LAURENT (SPACEIT, Switzerland)

Presenter: Dr INCERTI, SEBASTIEN (CNRS/IN2P3)

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