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## Yield function of the DOSimetry TElescope (DOSTEL) count and dose rates aboard an aircraft

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The Earth is continuously exposed to galactic cosmic rays. The flux of these particles is altered by the magnetized solar wind in the heliosphere and the Earth's magnetic field. If cosmic rays hit the atmosphere they can form secondary particles. The total flux measured within the atmosphere depends on the atmospheric density above the observer. Therefore, the ability of a particle to approach an aircraft depends on its energy, the altitude and position of the aircraft. The latter is described by the so-called cut-off rigidity.

The radiation detector of the detector system NAVIDOS (NAVigation DOSimetry) is the DOSimetry Telescope (DOSTEL) measuring the count and dose rates in two semiconductor detectors. From 2008 to 2011 two instruments were installed in two aircraft. First we corrected the data for pressure variation by normalizing them to one flight level and determined their dependence on the cut-off rigidity by fitting a Dorman function to the observation. The latter was used to compute the yield function, that describes the ratio of incoming primary cosmic rays, approximated by a force field solution, to the measured count and dose rate for a particular instrument. As for neutron monitors the sensitivity increases substantially above a rigidity of about 1 GV.

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