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## Solar particle events contribution in the space radiation exposure on electronic equipment at the polar orbit

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In the paper we are presenting processing results of flight data from METEOR-M spacecraft, which are been supplying in the Roscosmos space radiation exposure on electronic components Monitoring System by Fedorov Institute of Applied Geophysics. METEOR-M spacecraft operates in polar orbit 832 km altitude with inclination of ~99 degrees. The spacecraft contains spectrometers to measure particle fluxes with several energy ranges. In the previous paper we analyzed solar particle events contribution in the space radiation exposure at the middle-Earth orbit placed in outer radiation belt. In the present paper we are analyzing solar particle's influence on electronics at the polar orbit which is more geomagnetically shielded than middle-Earth orbits. We analyzed several big solar particle events in 2010-2014 and calculated its contribution in particle's fluxes at the polar orbit. We showed that solar protons can give considerable or even main contribution in particle's fluxes at the polar orbit comparing with radiation belts and, as consequence, the considerable contribution in electronic equipment failure due to single event effects as well as dose effects. This results are similar to one in the our previous paper for less geomagnetically shielded orbit. But by contrast with polar orbits there are no radiation belt protons at middle-Earth orbits (and geostationary orbit), so solar protons gives decisive contribution in single events effects in electronics at middle-Earth orbits (and geostationary orbit) and just fractional contribution at polar orbits.

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