**A Method for the Ambient Equivalent Dose Estimation in a Wide Range of Altitudes During SEP and GLE Events**

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The paper considers the modeling of proton transport through the Earth’s atmosphere during several SEP events. Solar sources and interplanetary medium conditions during these events are described in detail. Calculations are carried out using own model implemented with GEANT4. As the main results, quantitative estimates of the calculated ambient dose equivalent for altitudes in a wide range (also including civil aircraft flight altitudes of 10–11 km) for the geomagnetic cutoff rigidity values Rc = 0.13 GV are given.