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The South Atlantic Anomaly drift on the proton flux data of satellite experiments

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Dynamics of flux of high-energy charged particles trapped by geomagnetic field has been studied in this paper. As is known the Earth's magnetic field changes in direction and magnitude, as a result of this the South Atlantic Anomaly (SAA) region drifts. Using data of satellite experiments ARINA and VSPLESK geographical distributions of proton flux (80-100 MeV) were studied since 2006 to 2014. The ARINA and VSPLESK satellite experiments are designed with the aim to study the physics origin of high-energy charged particle variations and bursts. ARINA placed on Resurs-DK1 satellite, which launched in 2006 and is still operating. VSPLESK was installed on board of the International Space Station, which worked from 2008 to 2013. Detail analysis of SAA drift was fulfilled. The SAA region ($L=1.15-2.2$) was divided by separate zone with 0.05 step value. Maximum of proton flux was determined for each zone. Position of maximum drifts in west direction, which corresponds to the dynamics of the geomagnetic field. Average speed of SAA longitude drift is almost independent of the L-shell and amount about 0.5 degrees a year.

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