

Local time dependence of solar proton intensity: NOAA/POES observations

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Solar energetic particles can be penetrated to the high latitude region of the Earth's magnetosphere. Since July 2002, the polar orbiting NOAA/POES satellites (N15, N16, N17, and N18) have observed particles in a wide range of local time at altitudes of about 850 km. The onboard radiation monitors detect solar energetic protons (0.8 - 500 MeV). The data are analyzed with the time resolution of 1.5 hours which is near the orbital period of about 100 min. The observations show local time dependence of the solar protons detected at the low altitudes. It is found from the analysis of sixteen events of the solar protons that the flux intensity of solar protons in the nightside sector (03-21 MLT) tends to be about twice of that in the dayside sector (09-15 MLT). We will report the data analysis comparing with particle simulation using a MHD geomagnetic field.