Results of the analysis of electron precipitation events observed in the polar atmosphere

V.S. Makhmutov, G.A. Bazilevskaya, M.B. Krainev, Yu.I. Stozhkov, A.K. Svirzhevskaya, N.S. Svirzhevsky

Lebedev Physical Institute RAS, Leninsky Prospekt, 53, Moscow, Russia, makhmutv@sci.lebedev.ru

More than 450 Electron Precipitation Events (EPEs) were observed at Olenya station (Murmansk region, invariant latitude is 65). during long-term balloon cosmic ray measurements performed by Lebedev Physical Institute in 1957-2002.
The analysis of these EPEs allow us to conclude (1) the events are caused by precipitating electrons with energy from ~ 100 keV to a few MeV; (2) EPEs occur more frequently at descending phase of a solar cycle; (3) the EPE occurrence demonstrates a semiannual variation; (4) some very strong and peculiar EPEs are observed during solar proton events.