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Invariability of relationship between the polar cap magnetic activity and geoeffective interplanetary electric field

N. Podorozhkina and O. Troshichev

Arctic and Antarctic Research, Dept. of Geophysics, St. Petersburg, Russian Federation (olegtro@aari.nw.ru, 7-812-3373241)

Parameters α, β and φ, determining the relationship between the interplanetary electric field (EKL) and the value of magnetic activity δF in the polar caps, were derived independently on a basis of data for the solar minimum epoch (1997, 2007-2009) and solar maximum epoch (1998-2001) with use of the appropriate QDC reference. Comparison of independent sets of α, β and φ parameters demonstrates that the parameters are practically invariant over different years and solar cycle conditions.
To emphasize any differences in behavior of parameters derived for solar maximum and solar minimum epochs, two sets of parameters have been applied to calculate the appropriate PC values (termined as PCsolmax and PC-solmin) for the same year 2001. The result of analysis shows that the mean difference between two sets of PC index fluctuates around roughly zero level in the range