

THE POLAR CAP (PC) INDEX. PRESENT (UNIFIED) AND PAST INDEX CALCULATIONS

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The Polar Cap (PC) index introduced by Troshichev and Andrezen (1985) is derived from polar magnetic variations and is mainly a measure of the intensity of the transpolar ionospheric currents. These currents relate to the polar cap antisunward ionospheric plasma convection driven by the dawn-dusk electric field, which in turn is generated by the interaction of the solar wind with the Earth's magnetosphere.

Coefficients to calculate PC index values from polar magnetic variations have been derived by several different procedures in the past. DMI index values calculated in the past have most frequently been used in literature. Different calculation procedures have been used in some published reports. Now, a unified procedure (Troshichev et al., 2006) has been adopted for both the PCN (north) derived at DMI and the PCS (south) index values derived at AARI.

The presentation outlines and discusses the unified procedure. Differences between index values derived by the different procedures shall be outlined. The possible consequences of such differences for their use in ongoing analyses of solar wind-magnetosphere-ionosphere interactions and in previously published works are discussed.

Polar cap convection, geomagnetic indices, solar wind

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