



The Polar Cap index. Present (unified) and past index calculations

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Basically, 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. The index values are calibrated on a statistical basis to approximate values in units of mV/m of the interplanetary "merging" (or "geo-effective") electric field conveyed by the solar wind. Coefficients to calculate PC index values from polar magnetic variations have been derived by several different procedures in the past. Now, a unified procedure has been adopted for both the PCN (north) and the PCS (south) index values. The presentation shall outline and discuss the unified procedure as well as the former procedures used in the past. Differences between index values derived by the different procedures shall be outlined and the possible implications for their use in ongoing analyses of solar wind-magnetosphere-ionosphere interactions and in previously published works shall be discussed.