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Seasonal variations in the monitoring by PCN and PCS indices of Solar Wind energy input to the Magnetosphere.

Peter Stauning
Copenhagen, Denmark (pst@dmi.dk)

The Polar Cap (PC) indices, PCN for the northern hemisphere and PCS for the southern, monitor the antisunward transpolar convection driven by the solar wind impact on the Earth's magnetosphere. For cases where the interplanetary magnetic field (IMF) is not due northward and strong, then the PC indices provide excellent monitoring of the energy input from the solar wind to the Earth's magnetosphere. This feature has been demonstrated through the many reports on the close association between PC index magnitude and various indications of auroral activity. Furthermore, the quality of the monitoring of energy input from the solar wind to the magnetosphere by PC indices has been documented through the close relations between an equivalent Dst index calculated solely from the PC index values and the real Dst index based on low-latitude magnetic observations through large magnetic storms. In this presentation we briefly explain the PC index derivation and the calculation of an equivalent Dst index. We also report on previous correlations between the Dst index and the individual PCN or PCS indices as well as the correlations between the Dst and the combined PCC indices. Furthermore, we take the relations between the PC and Dst indices one step further by examining the seasonal variations in the relations between the Dst index and the PCN and PCS indices, respectively.