

AN ERRONEOUS DST INDEX IN 1971

A. Karinen (1), K. Mursula (1), J. Takalo (1), Th. Ulich (2)

(1) Department of Physical Sciences, P.O. Box 3000, FIN-90014 University of Oulu, Finland,

(2) Sodankylä Geophysical Observatory, Tähteläntie 62, FIN-99600 Sodankylä, Finland

Recently it has been shown [1, 2] that the diurnal UT variation depicted by the Dst index mainly results from an insufficient and asymmetric spatial coverage by the four Dst stations. Moreover, it was found that the Dst index exhibits an exceptionally large UT variation in 1971.

In the present paper we study the UT variation of the Dst index, especially in order to compare the year 1971 with other times. We calculate the autocorrelation function of the Dst index and the diurnal UT variation by the superposed epoch analysis from the hourly Dst values. Both methods verify the exceptionally strong UT variation in 1971.

We also recalculate the Dst index and compare this recalculated index with the original one. We conclude that the large UT variation in 1971 originates from an erroneous derivation of the original Dst index in this year.

[1] Takalo, J., and K. Mursula, A model for the diurnal UT variation of the Dst index, *J. Geophys. Res.* 106, 10905, 2001a.

[2] Takalo, J., and K. Mursula, On the diurnal variation of the Dst index, *Proc. of the SOLSPA 2001 Conference*, ESA-SP-477, 2001b, in print.