

## Statistical study of the Dst response to variations in the solar wind dynamic pressure

Yu P Maltsev, B.V.Rezhenov (Polar Geophysical Institute, Apatity)

Hourly data for 27 years have been used for examining of the  $Dst$  response to variations in the solar wind dynamic pressure  $P$ . The behavior of the coefficient  $a$  in the expression  $\Delta Dst = a \Delta P^{1/2} + b$  is studied under various geophysical conditions. It is shown that the coefficient  $a$  does not depend practically on the solar wind velocity and density, its average value being  $\sim 8$  nT/nPa<sup>1/2</sup>. When the geomagnetic activity is weak the coefficient  $a$  does not almost depend on the IMF  $z$  component. During storms with  $Dst = -(50-100)$  nT the coefficient  $a$  decreases with the growth of the southward IMF and falls down to  $\sim 4$  нТл/нПа<sup>1/2</sup> under  $B_z IMF = -5$  nT.