

# Ionospheric Disturbance Dynamo Associated to coronal hole during Geomagnetic Storm 1-5 August 2002

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## Abstract

In this paper we study the ionospheric–magnetic disturbance during a magnetic storm on 2 August 2002 associated to a coronal hole. The Earth was under the influence of a high speed solar wind and IMF was southward. We separate the magnetic disturbance associated to the ionospheric disturbance dynamo (Ddyn) from the magnetic disturbance associated to the prompt penetration of magnetospheric electric field (DP2). We used three Stations (AAE, GUA and HUA) from INTERMAGNET Magnetometers in the equatorial regions at different longitude sectors (African, Asian and American respectively). At the beginning of the storm our data highlights the effect of the prompt penetration of the magnetosphere electric field (DP2). During the recovery phase of the storm, we observe the signature of ionospheric disturbance dynamo due to wind produced by Joule heating in the auroral zone. It is the first time that we observe an anti-Sq circulation on magnetic data in agreement with the Blanc and Richmond's model of ionospheric disturbance dynamo. The strongest effect is observed in the American sector

Key words: Geomagnetic storm, Ionospheric disturbance dynamo, DP2 currents.