



## **Travelling Convection Vortices in the high-latitude ionosphere: the role of the solar wind dynamic pressure**

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Travelling Convection Vortices (TCVs) are one of the most interesting and controversial phenomena in the framework of the studies on the solar wind, magnetosphere and ionosphere coupling. Their origin, and their actual contribution to the energy transfer from the solar wind and the upper atmosphere are still subject of debate. We present here signatures of TCVs in the Northern polar cap observed after an interplanetary shock hit the Earth's magnetosphere on 6 January 1998 at 14:15 UT. Two main features emerge from observations in space: 1) the shock wave front is tilted towards dawn; 2) IMF data show appreciable differences between L1 (WIND and ACE data) and just upstream of Earth's bow shock (IMP-8 data). The TCV dynamics is studied with both ground magnetometers and SuperDARN data. Two main TCV systems show up: a couple of vortices in the morning side, travelling towards noon, and a single vortex in the afternoon, travelling antisunward. A discussion is presented of how in this case the pressure increase associated with the interplanetary shock may cause the morning side vortex.