



## **Total electron content over Europe at solar minimum**

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The paper presents results obtained from vTEC data sets evaluated from available Global Positioning System (GPS) stations over European area during the last two years of minimum solar activity in the 23rd solar cycle. A preliminary investigation of all available 5 minutes vTEC data over the period 2006-2007 reveal 15 “clean” events, all of which exhibited some form of vTEC increase focus exclusively on non large-magnitude solar-terrestrial events. Although these new results of vTEC disturbance patterns show good agreement on average with existing responsible mechanisms for solar-terrestrial disturbances, they also show some open questions related to the large vTEC variations during weak disturbances that require additional study for their relevance to different Global Navigation Satellite Systems (GNSS) applications.