

## **Ionospheric Response to a Strong Geomagnetic Storm using ionosonde data in Argentina**

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In this study, we investigate the ionospheric disturbances caused by a strong geomagnetic storm (maximum  $K_p = 7$ ) occurring between February 26th and 28th, 2023. The geomagnetic storm onset began on 26th February at 19:27 UT with a Sudden Storm Commencement (SSC), with a main phase reaching  $Sym-H = -161$  nT at 12:12 UT on February 27th, and followed by a long-lasting recovery phase until March 2nd.

The main scope of this work is to use ionosonde data in Argentina for space weather studies. We analyze the ionospheric response using data from two ionospheric stations deployed in Argentina: a) Tucumán (Latitude 26,9 S; Longitude 294,6 E), a low latitude station; and b) Bahía Blanca (Latitude 38,7 S; Longitude 62,3 W), a mid-latitude station. We used autoscaled data for the critical frequency of the F2 layer ( $foF2$ ) from AIS-INGV ionosondes installed in the mentioned locations. During the main phase of the geomagnetic storm, we observed in both stations a significant decrease in  $foF2$  implying the presence of an ionospheric storm with a negative phase. We observed also, a positive phase ionospheric storm in Bahía Blanca during the recovery phase of the geomagnetic storm (not observed in Tucumán). The addition of complementary data (from other instruments) and further analysis, are planned in future steps to improve this study.