

# Disturbances in the Chilean ionosphere during the space weather event of August 2018

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**Abstract:** The studies about the impact of Space Weather in the ionosphere are relevant for satellite and communication systems. This is even more applicable in the South America region, due to the significant separation between geographic and geomagnetic equator and the continuous displacement of the South Atlantic Magnetic Anomaly. At the end of solar cycle 24, a surprising G3 geomagnetic storm occurred, reaching a minimum Dst of -174 nT and having its main phase during the local night of South America. Using ionosonde parameters from La Serena station (J2P), Total Electron Content determinations and magnetometer time series from two SAMBA observatories, the disturbances at the Chilean ionosphere during 25-27 August 2018 event are studied. Similar results observed in other regional studies<sup>[1,2]</sup> were found. It is concluded that a combination of thermospheric composition changes, disturbed neutral winds and electric fields can explain most of the observed anomalies. Preliminary results of a disturbed E region during the Chilean local night are presented, which are reported for the first time in this event.

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