

## **Automatic scaling of polar ionograms from different ionosondes**

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AUSPICIO (AUtomatic Scaling of Polar Ionograms and Cooperative Ionospheric Observations) is a funded project of the Italian National Research in Antarctica Program. This project derives mainly from the need to stimulate international cooperation regarding ionospheric monitoring in the polar regions. Besides, the need to update the polar ionospheric stations to modern technological standards, is currently considered a necessity not to be neglected.

The INGV has a good number of ionograms recorded at the Italian Mario Zucchelli Base by the AIS-INGV ionosonde. These ionograms have been used to achieve some improvements to Autoscala for application in polar area. AUSPICIO project is supported by several partners providing data from various sites: Hobart (42.2°S, 147.3°E), Macquarie Islands (54.5°S, 159.0°E), Livingston Island (62.7°S, 299.6 °E), Estação Ferraz (62.1°S, 58.4°W), Casey (66.3°S, 110.50 °E), Mawson (67.6°S, 62.9°E), Davies (68.6°S, 78.0 °E), Base Zucchelli (74.7°S, 164.1°E), and Scott Base (77.8 °S, 166.8 °E).

As a part of AUSPICIO activity, the ionograms recorded at the above mentioned ionospheric stations have been used to create a data set encompassing different helio-geophysical conditions. Using this data set, off-line testings have been conducted to assess the performance of individual systems. It has been necessary to convert the files produced by the individual ionosondes to RDF, which is the standard Autoscala input format. The performance will be evaluated by comparing the outputs provided by Autoscala against those given by an experienced operator.

The profiles provided by Autoscala have also been used to assess the NeQuick and IRI models capability to describe the ionosphere electron density in the polar regions.