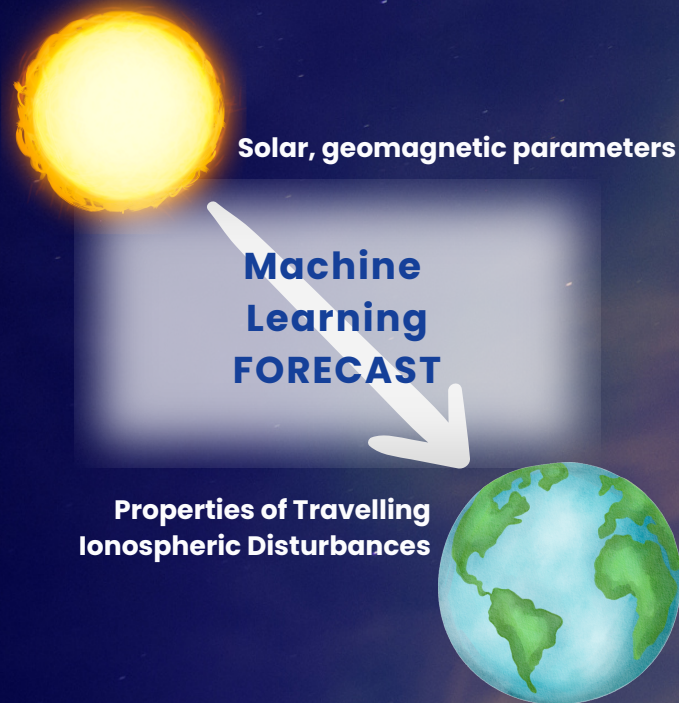


Objectives

Nowadays exist different techniques to detect in near-real time the presence of TIDs. To improve the performance of the different technological systems, a TID forecast is needed. The main objective for the T-FORS project is forecasting some hours in advance those TIDs generated by the Sun activity, and making a climatological study for the TID generated by the Earth-Atmosphere coupling.



Travelling Ionospheric Disturbances Forecasting System

Consortium

Travelling Ionospheric Disturbances FOREcasting System T-FORS

Contact

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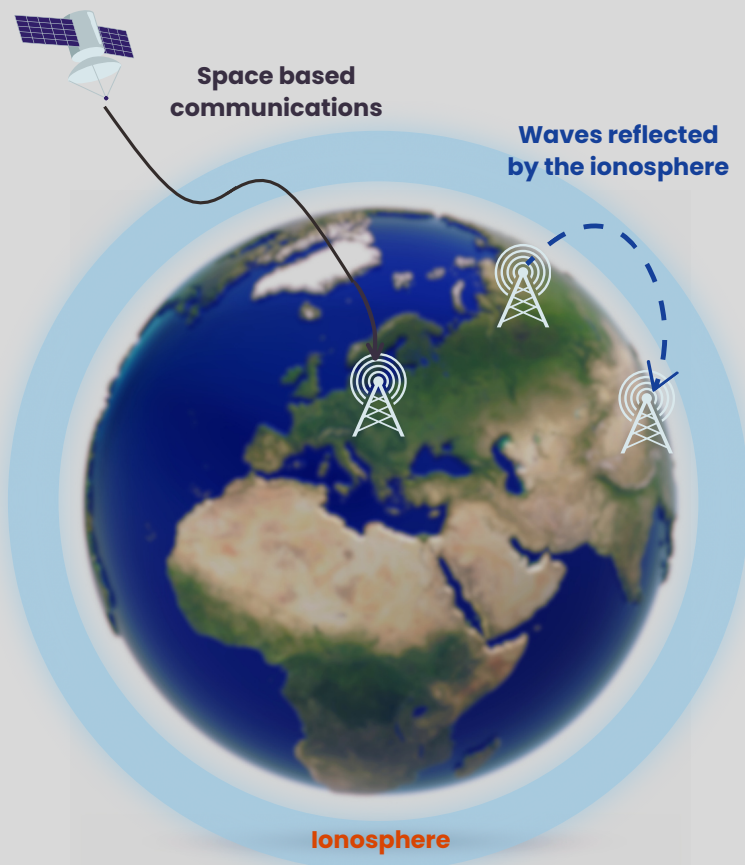


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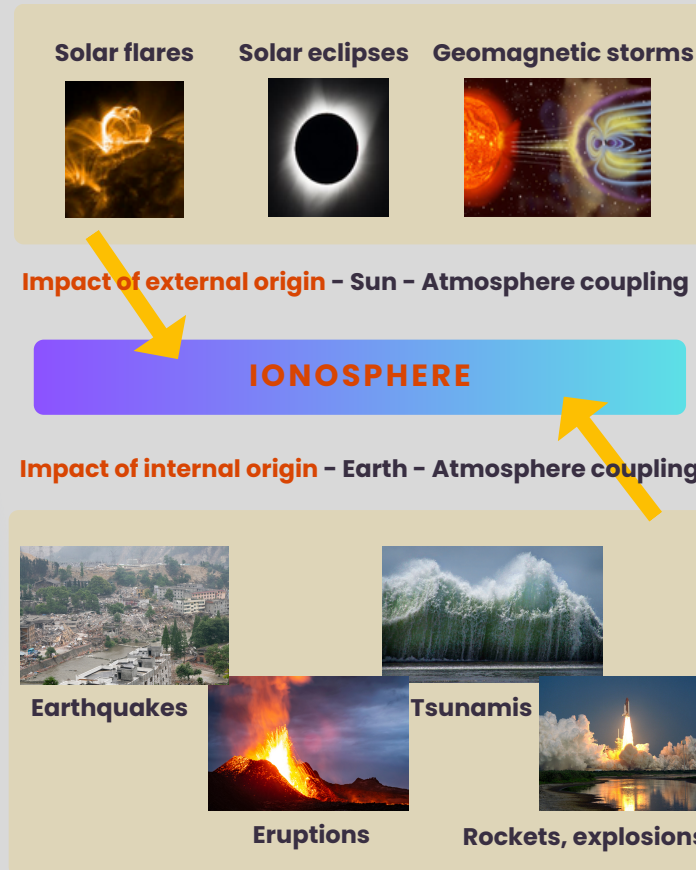
The Ionosphere

The ionosphere is defined as the ionized part of the upper atmosphere (60-2000 km approximately). As it contains a significant number of free electrons it has an important influence on the propagation of radio-electric signals. The ionosphere is a tool for ground-based radio-communication systems but it is a noise for space-ground radio-communications systems.



Travelling Ionospheric Disturbances (TID)

Travelling Ionospheric disturbances (TIDs) are perturbations that propagate as waves through the ionosphere disrupting the regular propagation of radio-electrical signals. TIDs can have different sources, from the top, as geomagnetic storms, and from below, as big earthquakes.



TIDs impacts

TIDs can have multiple effects in the operational of aerospace and ground-based infrastructures, especially in the geolocation, navigation and communication services based on radio-electric signals. Today exists an unprecedented need for high accuracy of a Global Ionospheric Weather Nowcast and Forecast. Finer effects in the ionosphere become important. TID is a "Silent Killer of Accuracy" for accurate-Navigation systems and generator of "Short range catastrophe", for radio-communication systems that cannot detect TID-inflicted errors by themselves. Academy is tasked to provide new understanding and accurate specification of the ionospheric dynamics.

