

## Abstract for the 2016 Beacon Symposium

### Ionospheric Reaction to Solar Flares in the Brazilian Sector

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The ionosphere is created when the terrestrial atmosphere is ionized by solar X-ray and extreme ultraviolet (EUV) photons. During solar flares, a fast increase in the electron density at different altitude regions takes place due to the abrupt enhance of the X-ray and EUV fluxes reaching Earth. With these changes in the ionosphere, radio communication and navigation can be drastically affected. The magnitudes of these Space Weather events can be related to the X-ray peak brightness and duration, which drive the intensity of the ionosphere response when the associated electromagnetic wave hit the sunlit side of the Earth's atmosphere. Other aspects defining these changes in a particular region are the local time, the solar zenith angle, and the position of the flare in the solar disc for each event. In order to improve the understand of radio signal degradation and loss in the Brazilian sector due to solar abrupt electromagnetic emissions, total electron content (TEC) data obtained by a GPS network of dual-frequency receivers spread all over Brazilian territory were analyzed. It was observed different ionospheric local changes during several X-ray events identified by GOES satellite regarding the 0.1-0.8 nm range, and some case studies were ponder for a more detailed analysis of these effects.