

Title:

Recent ionosphere collection results from a 3U CubeSat GNSS-RO constellation

Abstract:

Spire Global, Inc., is a leading player in the nanosatellite sector, and the first to provide commercial, low-cost GNSS-RO measurements to support critical weather data for numerical weather prediction. Spire has ambitious goals of collecting over 100,000 radio occultation profiles per day, providing robust coverage of neutral measurements over the entire planet.

In addition to augmenting the global observing system with a significant amount of high quality vertical atmospheric profiles, Spire will also provide a wealth of information about the ionosphere, including total electron content (TEC) and scintillation measurements. Similar to atmospheric soundings, the magnitude of ionospheric soundings will be the first of its kind.

In this talk, we review initial results of ionospheric measurements collected from a 3U CubeSat GNSS-RO constellation, including comparisons with ionospheric climatological models. We also look toward the future and discuss how global, real-time ionospheric measurements could positively impact deriving an accurate representation of the global ionospheric state.

