

Investigating the Characteristics of FORMOSAT-7/COSMIC-2 Radio Occultation Data

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Abstract

FORMOSAT-3/COSMIC (FS3/C) has been served over thirteen years and provided more than six-million radio occultation (RO) soundings, which has been demonstrated beneficial for weather prediction and climate monitoring. FORMOSAT-7/COSMIC-2 (FS7/C2) project is the follow-on mission, and six satellites have been successfully launched on 25 June 2019. The FS7/C2 neutral atmosphere data were released on 10 December 2019, and there are averaged 5,000 RO soundings per day over the tropical region. The FS7/C2 RO signal can be retrieved into several variables, i.e., bending angle, refractivity, and further to the atmospheric pressure, temperature, and moisture, etc. Over the tropical region, abundant atmosphere moisture could increase the uncertainty of RO retrieval at the lower troposphere. To better understand the FS7/C2 RO characteristics, six-months RO data are compared with multiple atmospheric observations and global model analyses, etc. A preliminary result will be shown in this presentation.