

CANCELLED COMPARISON OF COSMIC AND CHAMP RADIO OCCULTATION REFRACTIVITY PROFILES WITH RADIOSONDE MEASUREMENTS

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In this paper, the GPS Radio Occultation (RO) refractivity profiles provided by the COSMIC Data Analysis and Archival Centre (CDAAC), which are obtained from the Constellation Observing System for Meteorology, Ionosphere and Climate (COSMIC) mission and CHALLENGING Mini-satellite Payload (CHAMP) mission, are statistically compared with the observations of 38 radiosonde stations maintained by the Australian Bureau of Meteorology during the period from January 1, 2007 through May 19, 2008. Different collocation criteria are compared at first, and RO soundings that occur within 3 hours and 300 km of radiosonde measurements are used for the final statistical comparison. The overall results show that the agreement between GPS RO refractivity profiles and the radiosonde soundings from the 38 stations are very good at 0-30 km altitude, with mean absolute relative refractivity deviations of less than 0.5%. Latitudinal comparisons indicate that there are negative refractivity deviations in the lower troposphere over the low latitude and middle latitude regions and large standard deviations exist in the lower troposphere of low latitude regions, which can reach up to 6%.