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Poster

Radio occultation (RO) observations of precipitable water (PW) from the Constellation Observing System for Meteorology, Ionosphere, and Climate (COSMIC) and Meteorological Operational Polar Satellite - A are compared with ground-based Global Positioning System (GPS) PW for 6 years (2007–2012) over 47 islands. The layer of data void was Filled using two methods: least-square fitting for wet data (ROwet) and placing values of ECMWF in RO profiles below 10 km (ROecm). Both methods were compared with more than 12000 collocated samples, differences in PW between ROwet and GPS exhibit a standard deviation of less than 6 mm with correlation of 0.92, besides ROecm and GPS shows correlation of 0.95. The monthly means of PW obtained by both methods is compared with PW of GPS and NCEP, ERA Interim reanalyses, for both hemispheres. The results show that PW RO, PW GPS and reanalyses are highly correlated. This follows that the RO data are also potentially useful for studying the weather conditions on the ocean and are an important source for the global reanalyses along with other datasets.
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