

Chi

Ao

JPL

Byron Iijima, JPL

Anthony Mannucci, JPL

Panagiotis Vergados, JPL

Olga Verkhoglyadova, JPL

Kuo-Nung Wang, JPL

Oral

We describe our recent work on characterizing the uncertainty of the GNSS RO retrieval products at JPL, from bending angle profiles (Level 1b) to refractivity profiles (Level 2a) and temperature/water vapor profiles (Level 2b) to monthly gridded data (Level 3). Our ultimate goal is to provide an error bar for each data point that is rigorously derived and validated. This is a necessary step towards establishing RO products as climate data records. Our basic approach is to propagate both systematic and random errors through the retrieval chain. The challenge comes from the proper estimation of the errors that can be introduced in each retrieval step. We will describe our methodology and assumptions used in estimating the key error sources and present some initial results, especially those that affect the upper altitudes (above 25 km) and lower troposphere (below 6 km).

Another benefit of per datum error characterization is that it can provide a clear basis for RO quality control that is data-driven and altitude-dependent, thus optimizing the number of measurements that can be utilized for different applications.

OSTS session

Regional and Global CAL/VAL for Assembling a Climate Data Record

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