

Method of Assessing RO Retrieval Bias in the Ionospheric Model

M. Q. Chen, Y. C. Su, J. Y. Liu, and **S.-Y. Su**

Institute of Space Science, National Central University, Chung-Li, Taiwan

t2700146@cc.ncu.edu.tw, sysu@jupiter.ss.ncu.edu.tw

The FORMOSAT 3/COSMIC RO retrieved ionospheric model is assessed for its bias by comparing with the OSSE simulated RO retrieved ionosphere from a theoretical ionospheric model derived from TIE-GCM. First, the variances are obtained between the RO retrieved data from the TIE-GCM model and from an assimilated model derived by combining the TIE-GCM Model with the FORMOSAT 3/COSMIC data. The bias in the FORMOSAT 3/COSMIC data is found to be the calculated variance plus the difference between the OSSE RO retrieved data from the assimilated TIE-GCM model and the assimilated model itself. Using the FORMOSAT 3/COSMIC density profiles on day 80 of 2007 as examples of illustration, we found the biases are most noticeable at the topside ionosphere and exist very frequently at the bottomside below 200 km.