RADIO OCCULTATION BENDING ANGLE ANOMALIES DURING TROPICAL CYCLONES

R. Biondi*(1), T. Neubert (1), S. Syndergaard (2), J. Nielsen (2)

(1) DTU Space, National Space Institute, København, Denmark (2) DMI, Danish Meteorological Institute, København, Denmark

The tropical deep convection affects the radiation balance of the atmosphere changing the water vapor mixing ratio and the temperature of the upper troposphere lower stratosphere. The aim of this work is to better understand these processes and to investigate if severe storms leave a significant signature in radio occultation profiles in the tropical tropopause layer. Using tropical cyclone best track database and data from the Constellation Observing System for Meteorology, Ionosphere and Climate (COSMIC), we show that the bending angle anomaly of a GPS radio occultation signal is typically larger than the annual mean of the atmosphere around the tropopause. Comparisons with co-located CALIPSO products and GOES analyses will also be shown. The results are discussed in connection to the GPS radio occultation receiver which will be part of the Atomic Clock Ensemble in Space (ACES) payload on the International Space Station.