C2.2-0056-18 SIGNATURE OF A SECONDARY WAVE IN THE BRAZILIAN EQUATORIAL IONOSPHERE

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In the past decade, understanding of the day-to-day variability of the ionosphere induced by waves propagating from bellow has considerably been advanced. More recently, several studies have pointed out that the secondary waves arising from the nonlinear interaction between tides and planetary waves could significantly impact the ionosphere. From the meteor radar wind at Cariri (7.4°S, 36.5°W) and ionossonde measurements at Fortaleza (3.9°S, 38.4°W) we investigated the presence and effects of secondary waves in the Brazilian equatorial MLT and ionosphere. We found an evidence of the nonlinear interaction between an ultra-fast Kelvin wave and the diurnal tide in the MLT wind. We identified a 1.3-day secondary wave arising from this interaction and found it to propagate upward with a relatively long vertical wavelength (44 km), which may allow it to penetrate into the ionosphere. From the ionossonde measurements at Fortaleza we found indications of the modulation of the F-layer height by the 1.3-day secondary wave. In this paper, we will present and discuss details of this study.

C2.2-0057-18 ANGWIN: INTERNATIONAL GROUND-BASED OBSERVATION NETWORK FOR THE STUDY OF GRAVITY WAVES IN THE POLAR REGION

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Atmospheric gravity waves play an important role in transporting energy and momentum between atmospheric spheres and drive circulations that affect key processes such as formation of the ozone hole and the cold summer polar mesosphere. One of the reasons that still avoid the full understanding and description of gravity waves is the lack comprehensive observations over the Antarctic region. The ANtarctic Gravity Wave Instrument Network (ANGWIN) is a highly successful grassroots programme that was started in 2011. It seeks to use a network of observations to measure gravity waves continent wide and through all levels of the atmosphere, in order to fully understand their impact and constrain modelling work. Although ANGWIN initially focused on the Antarctic, the group is now aiming to develop collaborations in both polar regions.

Current member countries of ANGWIN are Australia, Brazil, Japan, South Korea, the United Kingdom and the United States of America. The objective of ANGWIN network include; Qualify the longitudinal variations in gravity waves and determine causes; Characterize wave propagation and influence; Relate observed gravity waves to sources throughout the atmosphere; Study interactions of gravity waves with planetary scale waves; Compare polar wave observations to model parameterizations; Determine the effects of gravity waves on polar stratospheric cloud formation.

The ANGWIN network, its objectives and some recent results will be presented in the poster.