



The Relationship of Stratospheric QBO with the Difference of Measured and Calculated NmF2

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Abstract

The relationship between stratospheric QBO and the difference (Δ NmF2) between NmF2 calculated with IRI-2012 and measured from ionosondes at the Singapore and Ascension stations in the equatorial region was statistically investigated. As statistical analysis, the regression analysis was used on variables. As a result, the relationship between QBO and Δ NmF2 was higher for 24:00 LT (local time) than 12:00 LT. This relationship is positive in the solar maximum epoch for both stations. In the solar minimum epoch, it is negative at 24:00 LT for Ascension and at 12:00 LT for Singapore. Furthermore, it was seen that the relationship of the Δ NmF2 with both the easterly and westerly QBO was negative for all solar epochs and every LT, at Ascension station. This relationship was only positive for solar maximum epoch and 12:00 LT, at Singapore station.

Key words: International Reference Ionosphere, QBO, NmF2, regression analysis.