

# **QBO modulation of the southern polar mesopause region**

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Recent studies found a southern hemisphere polar mesopause temperature modulation by the quasi-biennial oscillation (QBO). It was suggested that this modulation is induced by an extension of the Holton-Tan effect (HTE): during the easterly phase of the QBO planetary waves are reflected at the subtropical zero wind line resulting in a weaker polar vortex. According to the interhemispheric coupling mechanism this leads to a warming of the summer mesopause region. In this study we want to test this theory by tracking the HTE extension from the northern hemisphere polar vortex to the southern hemisphere mesopause temperature using the nudged version of the extended Canadian Middle Atmosphere Model (CMAM30) and, for comparison, satellite observation from the Microwave Limb Sounder (MLS).

Key words: Interhemispheric coupling, QBO modulation, Holton-Tan effect