

## **Meteor radar observations of vertically-propagating low-frequency inertia-gravity waves in the Southern mesopause region**

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Vertically-propagating low-frequency inertia-gravity waves (IGWs) are retrieved from meteor radar winds observed at King Sejong Station (KSS: 62.22°S, 58.78°W), Antarctica. Horizontal winds reconstructed in the regular time-height grids demonstrate clearly the persistent occurrence of low-frequency IGWs near the mesopause region throughout the whole year of 2014 and the downward progression of their phases (i.e., upward energy propagation). Stokes parameters and rotary spectra computed from the hodographs of polarized (coherent) upward-propagating IGW horizontal winds reveal that meridional propagation is dominant, and the intrinsic frequencies of the upward propagating IGWs are  $1f-2f$ , where  $f$  is the magnitude of Coriolis parameter at KSS. The meridional propagation is discussed in relation to possible forcing mechanisms.