

PROPAGATION AND DUCTING OF SHORT-PERIOD GRAVITY WAVES OVER ANTARCTICA

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Short-period gravity waves are known to be significant sources of momentum deposition in the upper mesosphere. Recent studies using an extensive imaging data set obtained as part of a collaborative program with British Antarctic Survey have identified significant differences in the momentum transported by short-period waves as observed from Halley Station (76°S, 27°W) on the Brunt ice shelf and Rothera Research Station (67° S, 68° W) on the Antarctic Peninsula. However, this result is recognized to be an upper limit since it assumes that all of the wave motions were freely propagating. In this study we utilize available mesospheric wind data to investigate the intrinsic properties of these waves and their nature (i.e. freely propagating or ducted) to help provide a more realistic assessment of the impact of short-period waves on the Antarctic environment.