

CLIMATOLOGY OF SMALL-SCALE MESOSPHERIC GRAVITY WAVES OBSERVED OVER ANTARCTICA

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An investigation of short-period mesospheric gravity waves at high-latitudes has been performed from two locations in Antarctica (Halley Station at 75.5°S, 26.7°W, and Rothera Research Station at 67.3° S, 68.1° W) in collaboration with British Antarctic Survey. These two sites were chosen to study wave generation in the vicinity of the Antarctic Peninsula and over extensive ice shelves. Observations were initiated in 2000 and were obtained over four consecutive winter seasons (two from Halley and two from Rothera). In this study we present the results of a 2-D analysis of over 400 spatially extensive, short-period wave events observed in the NIR OH emission (altitude ~87 km). Our results show a marked anisotropy in the gravity wave propagation headings observed from both sites revealing a dominant poleward component for the wave propagation headings (> 80% events) towards the Antarctic Continent, and a significant east-west variability that altered with the evolving winter seasons. A summary of these results will be presented and compared with short-period wave climatology at mid-latitudes which also exhibits marked anisotropy.