

**Airglow imaging measurements of mesospheric gravity waves over Resolute Bay, Canada**

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Airglow imager at Resolute Bay, Canada (74.7 N, 265.1 E) has observed small-scale gravity waves in the mesosphere and lower thermosphere since January 2005. The observations have been made during the period without sun and moon in the sky. We investigate wave characteristics (horizontal wavelengths, phase speeds, and propagation directions). Sodium airglow (589.3 nm) images, which are obtained with exposure of 30 s and temporal resolution of 120 s, are used for the analysis, since the Na emission is the least susceptible to auroral contaminations. Based on long-term imaging observations at several other stations, it has been shown that the wave characteristics have seasonal and geographical dependences, particularly, in propagation directions, because the directions are greatly controlled by wind profiles in the middle atmosphere, locations of the wave sources, and ducting structures in the MLT region. In the presentation, we will report statistical results of small-scale gravity waves on 137-night from January 2005 to November 2006 (during two winter seasons).