

Abstract Submitted
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TIMED/SABER satellite investigations of mesospheric gravity wave variances over the Andes¹ JONATHAN PUGMIRE, MICHAEL TAYLOR, YUCHENG ZHAO, DOMINIQUE PAUTET, Utah State University, JAMES RUSSELL, III, Hampton University — Focusing on data from the SABER instrument aboard the TIMED satellite temperature variances are determined as a function of altitude to quantify small scale gravity waves. This was done using IDL software to extract all the temperature profile measurements that were measured by SABER within a limited geographical area, centered on our ground-based optical imager at Cerro Pachon, Chile (30.3°S, 70.7°S). Then large-scale tidal waves, with wavenumbers 0-6, were removed from each profile revealing the gravity wave perturbations. The temperature variance were computed and recorded at several altitudes. Temperature variances reveal possible increased activity due to mountain waves. Mountain waves in the mesosphere are a relatively unexplored field in aeronomy. They are generated by strong winds blowing over mountains creating stationary waves as viewed from the ground. They propagate upwards depositing momentum and energy, and grow in amplitude predominantly in the winter months. Initial results will be shown comparing satellite and ground-based observations. This technique has high potential for investigating gravity wave effects with other ground-based measurements around the world.

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