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**Duane C Harris\*** (dharri31@asu.edu), School of Mathematical & Statistical Sciences, Box 871804, Arizona State University, Tempe, AZ 85287, and **Mohamed Moustououi** and **Collin Kofroth**. *Impact of Stability above, below and within the Tropopause on Mountain Wave-Induced Momentum Transfer to the Stratosphere*. Preliminary report.

An analytical study of upward propagating gravity waves generated by flows over topography in the presence of non-uniform stratification is presented. These waves are partially transmitted and reflected as they reach the tropopause depending on the behavior of the stability profile in the upper troposphere and lower stratosphere. The tropopause is viewed as a thin stably stratified layer characterized by a sharp stratification with high values of stability in its vicinity compared to layers above and below as reported in some observations. The dynamics of gravity waves under the Boussinesq approximation is governed by Taylor-Goldstein equation. Analytical solutions of this equation are derived for typical stability profiles with different values below, within and above the tropopause. It is found that the amount of waves transferred to the stratosphere is significantly impacted by the stability profile. (Received September 16, 2016)