

Orographic gravity waves are ubiquitous in our atmosphere, having a large impact on the energy and momentum transport. Their scales reflect scales of the orography and as such global circulation models cannot resolve them and they need to be parameterized. In this thesis we will introduce the theory behind gravity waves and flow around an obstacle such as a mountain. We show their impact in global models and how they interact with the resolved planetary waves. In the last part of this work we will introduce several idealized simulations, analyzing the resulting wave activity and effects connected to it. We finish with comparison of different parameterization schemes applied on coarse resolution simulations and evaluation of their performance.