



Towards a non-arbitrary gravity wave source parameterization in a general circulation model

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Gravity wave parameterizations in General Circulation Models (GCMs) typically assume that gravity waves at their source level are excited uniformly in space and in time. This arbitrary gravity wave source specification does not allow for variability associated with seasonal variability of gravity wave sources and does not consider that different wave sources excite waves with different properties, such as phase speeds and amplitudes. In this talk we present results from the Whole Atmosphere Community Climate Model, version 3, that uses a gravity wave source specification tied to three different wave sources: orography, convection, and frontal zones, without an arbitrarily specified background spectrum. We present the results of this novel simulation as compared to a traditional arbitrary gravity wave source parameterization, as well as discuss the uncertainties associated with the source-based gravity wave parameterization.