



Missing forces and the horizontal refraction of realistic gravity wave spectra

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In this talk we consider a realistic gravity wave spectrum comprising a set of rays spanning absolute frequency and wave number ranges seen in observational spectra. The GROGRAT ray-tracer is used to propagate the gravity wave ray spectrum, and the importance of horizontal refraction is assessed. In this way we are able to search for experimental evidence for "missing forces", which have been of considerable recent theoretical interest. Missing forces may turn out to be an important omission in gravity-wave parametrisations, and this study sheds new light on what, if anything, needs to be done. For instance, are tuning procedures in gravity wave parametrisations, as used in global circulation models, sufficient to compensate for the missing forces?