



Empirical method for the prediction of mountain wave turbulence

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Breaking topographically-induced gravity waves or mountain waves are a major source of turbulence encounters by commercial and general aviation aircraft. An empirical method for forecasting mountain wave-induced turbulence (MWT) over the continental U. S. is presented which uses a combination of MWT seasonal and regional climatologies, terrain characteristics, and turbulence diagnostics derived from operational numerical weather prediction (NWP) model output. Accuracy assessments are provided through comparisons to thousands of pilot reports of turbulence from mid troposphere to lower stratosphere over mountainous areas in the U.S. where the report specifically indicated that the turbulence was mountain-wave related.