

The GOES-R Tropopause Folding Turbulence Product: Finding Clear-Air Turbulence in GOES Water Vapor Imagery

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Tropopause folding has a well-established link to clear air turbulence in the upper troposphere. Here we show the latest version of an empirically derived algorithm that models tropopause folds in three dimensions, based on gradients observed in the traditional GOES water vapor channel. These modeled tropopause folds are used to predict clear air turbulence, and are shown to have significant skill when validated with commercial airline pilot reports as well as automated turbulence reports. The algorithm is an Option 2 derived product for the GOES-R Algorithm Working Group. We will present the latest developments after the product validation, including routine and deep-dive validation/verification tools, algorithm performance improvements, and application to multiple satellite platforms including GOES-West and Meteosat.