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## Study of Tropopause Folding Turbulence Detection(TFTD) Algorithm for the future Korean geostationary satellite

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The tropopause folding turbulence as one of the Clear-Air Turbulence (CAT) is a severe aviation turbulence. Because of its small time and spatial resolution, detection and forecasting have difficulties. It occurs unexpectedly at a cruising altitude of commercial aircraft, and could be possible to meet dangerous aviation accident. On the other hand, since Northeast Asia including Korea has the strongest jet-stream in the world, and the air transport industry becomes more active, the turbulence forecasting in this area seems more important.

In spite of this importance, the development of the turbulence detection algorithm using geostationary satellite data is at an early stage. The Tropopause Folding Turbulence Product (TFTP) algorithm of the U.S. future geostationary satellite, GOES-R, calculates the upper tropospheric specific humidity using a water vapor channel to compute spatial gradient as possible areas with the risk for turbulence by using image processing method. This study describes Tropopause Folding Turbulence Detection (TFTD) algorithm building on the GOES-R TFTP for the future Korean geostationary meteorological satellite, Geo-KOMPSAT-2A.