

Severe Turbulence Incidents: Case Studies of Convectively Induced Turbulence

Executive Summary

This report investigates three case studies of aviation incidents with severe turbulence. All three cases are examples of Convectively Induced Turbulence (CIT), the most difficult category of turbulence to forecast due to convection typically occurring on scales smaller than current global model resolutions. The case studies are investigated using the Graphical Turbulence Guidance (GTG) system; the latest, non-operational version of GTG includes diagnostics of in-cloud turbulence. Based on the case studies, the report concludes that probabilistic forecasts of CIT may be more effective than using deterministic forecasts, considering future global model resolutions will still be above the resolutions required to resolve convection.