

MELTING THE RISK: NEW PREDICTIVE MODELS AIM TO MITIGATE HIGH-ALTITUDE ICING



A newly developed NASA dataset will be used to train a modeling framework that predicts dangerous ice crystal icing (ICI) that occurs within thunderstorm anvil clouds. This model will be utilized by the Federal Aviation Administration Aviation Rulemaking Advisory Committee to help industry design engines that can operate safely in ICI environments. ICI has caused numerous aviation incidents over the last thirty years because ICI conditions appear benign to aviation weather radars. Anvil cloud ice is ingested into aircraft engine cores, leading to power loss and/or damage. To address this threat, NASA Langley partnered with international agencies and the FAA to gather in-situ data using a variety of research aircraft including NASA's DC-8, that is merged with geostationary satellite and model reanalysis data products. This multi-sensor view will train machine learning algorithms that estimate cloud ice content and the total ice exposure that could be encountered by commercial aircraft.

