

Improving forecasts of volcanic ash concentrations

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Volcanic ash can severely damage airplanes, and eruptions such as the 2010 Eyjafjallajökull eruption may result in major disruption to air travel. Improved forecasting of ash cloud locations and concentrations could benefit the aviation industry and reduce delays, but forecasting is challenging because eruptions and atmospheric transport of volcanic ash are complex processes.

The UK Met Office recently improved its modeling procedures, enabling peak ash concentrations to be estimated during the 2010 Eyjafjallajökull eruption. Webster et al. describe the Met Office's method of ash concentration forecasting and how it has evolved from simply predicting regions of ash to also estimating peak ash concentrations. They compared the forecasted ash concentrations with ground- based and aircraft-based observations collected during the Eyjafjallajökull eruption and evaluated the sources of errors.

Although there were challenges with predicting ash concentrations and the errors were, at times, large, the authors conclude that their ash forecasting method gives useful information on likely ash concentrations. The study provides guidance for further improvements in operational forecasting.

More information: Operational prediction of ash concentrations in the distal volcanic cloud from the 2010 Eyjafjallajökull eruption, *Journal of Geophysical Research-Atmospheres*, [doi:10.1029/2011JD016790](https://doi.org/10.1029/2011JD016790) , 2012

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