

# Damaging volcanic ash stays well beyond welcome

July 30 2013, by Miles O'brien

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Volcanic ash can become a multimillion-dollar nightmare, lingering in the skies, getting into engines and damaging aircraft.

Volcanic ash is known to present hazards to aviation, infrastructure, agriculture, and human and animal health. With the emergence of aviation in the last 50 years as a key component of global travel and transport, the importance of understanding how long ash is suspended in the atmosphere, and how far it is transported has taken on greater importance.

Airborne ash abrades the exteriors of aircraft, enters modern [jet engines](#) and melts while coating the interior parts, thus causing damage and failure. For example, the 2010 Eyjafjallajökull eruption in Iceland was the most disruptive event in aviation history, with billions of dollars of losses to the [aviation industry](#) and [global economy](#). Much of this was unnecessary and better knowledge of the transport of fine ash could minimize such losses in the future. However, present understanding of ash transportation can only account for general air movements, but cannot fully address how much or how long ash remains in the atmosphere, and how much falls out as the ash travels downwind.

With support from the National Science Foundation (NSF), volcanologist Dork Sahagian of Lehigh University in Bethlehem, Pa., and his colleagues are learning more about the aerodynamic properties of ash, and how long different sizes and shapes stay in the atmosphere. They use a wind tunnel to study how ash travels in the atmosphere during

and after [volcanic eruptions](#). The researchers want to develop ways to predict when and for how long damaging ash will fill the skies, and when it's safe to fly again.

Provided by National Science Foundation

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