



Recent eruptions in Iceland from a meteorological perspective

G. N. Petersen, H. Bjornsson, Þ. Arason, and S. von Löwis
Icelandic Meteorological Office, Reykjavík, Iceland (gnp@vedur.is)

In the last two years there have been two explosive eruptions in Iceland: Eyjafjallajökull volcano in 2010 and Grímsvötn in 2011, lasting for 39 and 7 days, respectively. Although the eruption in 2010 caused major disruption in air traffic the much shorter eruption in 2011 was considerably more powerful.

In spring of 2010 the weather situation was unusual with persistent northwesterly winds dispersing volcanic ash towards northern Europe. This escalated the societal effect of the eruption by resulting in closures of airspace and airports. The volcanic plume rarely rose above 7 km in altitude, thus the ash was mainly confined to the troposphere. The relatively long eruption gave a unique opportunity to observe the influence of the ambient atmosphere on the variable eruptive plume from a rather small eruption.

The eruption of Grímsvötn in 2011 peaked during the first hours of the eruption with the eruption plume reaching up to 25 km altitude, far above the tropopause. Due to favourable conditions aloft in the initial, and by far the most intense, phase of the eruption most of the ash was deposited locally. The difference in strength of the two eruptions, is emphasized in the rate of volcanic lightning being two orders of magnitude higher in the latter eruption.

Resuspension of ash is a common local problem, for months to years, in the aftermath of explosive eruptions during dry and windy periods. Following the last two eruptions this has been a considerable problem in the rural communities in South-Iceland.