The volcanic ash plume near the Eyjafjallajökull on 1-2 May 2010

U. Schumann, R. Baumann, A. Minikin, O. Reitebuch, Th. Sailer, H. Schlager, Ch. Voigt, and B. Weinzierl

Measurements

Airborne measurements of the volcanic ash plume over Central Europe and close to Iceland’s Eyjafjallajökull volcano in April/May 2010 provided an extensive data set on the volcanic ash plume properties. Here, we quantify the plume properties for the period of 1st and 2nd May, 2010, from the volcano in Iceland in more detail.

In-situ observations, 60°N, 15:00 UTC 2 May 2010

at 3.4 km altitude, i.e. in the top part of the plume

Top right: Particle number N, surface S, and volume V per unit size interval and unit ambient volume versus particle diameter D. Blue squares: PCASP data points. Green triangles: OPC data (open symbols: particle sizes affected by low inlet collection efficiency).

Red circles represent FSSP data. L, M, H analysis for refractive index 1.59 + (0.,0.004, 0.008)i.

Optical Depth at 2 μm derived from Lidar Data


Summary

The measurements provide a test case for volcanic ash plume modeling.