



A first quantifying simulation of the Eyjafjalla eruption with EURAD-IM

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The European Air pollution Dispersion Inverse Model (EURAD-IM) has been applied for a Europe-wide simulation of Eyjafjalla's ash and SO₂ releases. The model includes detailed gas phase and particle dynamics modules, which allow for quantitative estimates of measured volcano releases, given suitable information. For plume heights 6-hourly London VAAC information was taken. No useful quantitative flux estimates were available for gases and fine particles. However, simulated filaments of ash clouds were in excellent phase agreement with measurement records of particle number and SO₂ of the German Weather Service's alpine mountain station Zugspitze. This data has been used for the quantification of the volcano emissions. The initial emission of aerosol mineral dust by Eyjafjalla could thus be estimated to 2.5 t/s. By daily simulations, a first quantification could be performed for the week of intense activity.