

1.5-P06. Backtracking the Holuhraun exceptional SO₂ event in September 2014

On August, 28th, 2014, the effusive „Holuhraun“ fissure eruption started near the vent of the Bardarbunga volcano leading to SO₂ emissions of up to 35000 tons per day for several weeks. Whereas concentrations of up to 21000 micrograms per cubic meter measured in Icelandic towns did not come as a surprise, remarkable concentrations could be found in other parts of Europe. This was especially true for the Alpine area, where health-relevant concentrations well above 200 microgram per cubic meter could be found in south-eastern Austria. In the present work measurements of mountainous low-background stations (e.g. Sonnblick, 3106 m a.s.l.) were used together with backward (srs-)fields from the Lagrangian dispersion model FLEXPART using ECMWF meteorological input data to apply a back-trajectory statistic and to calculate the PSR (Possible Source Region) fields in accordance with the method applied for CTBT verification. For this so-called correlation method, a new approach was tested, namely to correlate logarithmic measurement values. As result, it will be demonstrated whether the Holuhraun eruption can be properly identified as source location for the SO₂ measured, and whether realistic estimates of the source strength can be provided.

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