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T1.5-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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