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Stratospheric aerosol enhancement and decay after Raikoke eruption in July 2019 as observed from Tbilisi, Georgia and Halle, Belgium using ground-based twilight sky brightness spectral measurements.

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Twilight sky brightness spectral measurements are an inexpensive and effective way to observe enhancements of stratospheric aerosols. In this work, we present our observations of the volcanic cloud produced by the eruption of Raikoke volcano (Kuril Islands, 48°N, 153°E) above two distinct sites in South Caucasus and Western Europe, respectively: Tbilisi, Georgia (41° 43’ N, 44° 47° E) and Halle, Belgium (50° 44' N, 4° 14' E).

We present our dataset, which describes the evolution of the stratospheric aerosol in the period July 2019-December 2020. Stratospheric aerosol vertical extinction profiles were retrieved at 780 nm from spectral measurements of twilight sky brightness above both sites.

The first aerosols originating from Raikoke were observed in the beginning of July above Halle and in August above Georgia. The layer maximum was mostly observed at 17 km above Georgia and at 10-17 km above Belgium until April-May 2020. Later, the volcanic cloud was observed sporadically until the end of 2020.