



Supplement of

Aerosol pollution maps and trends over Germany with hourly data at four rural background stations from 2009 to 2018

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In this supplement to ACP-2029-1098 complementary maps are collected of ozone (Fig. S1),
 NO_x (Fig. S2), and SO₂ (Fig. S3) measured at the four stations of the present study. The maps
 represent averages of the time period 2009-2018 and are divided into two parts each, one
 covering the months April through October, the other one the months November through
 March.

For the discussion of differences between immission and emission maps EDGAR-emissions
of PM₁₀, BC, SO₂, and NO_x along all 350593 hourly back trajectories to the four stations during
the ten studied years were summed up and then again extrapolated back along each trajectory.
In Fig. S4 10-year average maps of these extrapolated emission sums are displayed.



Fig. S1 Maps of average O₃ (μgm⁻³) extrapolated under 1000 m height along back trajectories
from hourly data at the four stations from 2009 to 2018, left: months April through
October; right: months November through March. The GUAN-stations are marked
with colored diamonds. The Collmberg station lies 30 km Southeast of station

- Melpitz. The black dots represent cities larger than 100000 inhabitants with the size of the dots being proportional to the number of inhabitants.



Fig. S2 As Fig. S1 but for average NO_x (μ gm⁻³) extrapolated under 1000 m height along back trajectories from hourly data at the four stations from 2009 to 2018, left: months April through October; right: months November through March.





Fig. S3 As Fig. S1 but for average SO₂ (μgm⁻³) extrapolated under 1000 m height along back
trajectories from hourly data at the four stations from 2009 to 2018, left: months April
through October; right: months November through March.



Fig. S4 Average sums of annual emissions of a) PM₁₀, b) BC, c) SO₂, and d) NO_x (tons/year)
touched by hourly 5-day back trajectories under 1000 m height leading to the four
stations of the present study from 2009 to 2018. The black dots represent cities larger
than 100000 inhabitants with the size of the dots being proportional to the number of
inhabitants.