Atmospheric
Chemistry
and Physics

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Supplement of

Daytime formation of nitrous acid at a coastal remote site in Cyprus indicating a common ground source of atmospheric HONO and NO

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Fig. S1: Fires (red dots) detected during the whole measurement campaign from 7.7.2014 to 3.8.2014 (NASA FIRMS Web fire mapper).
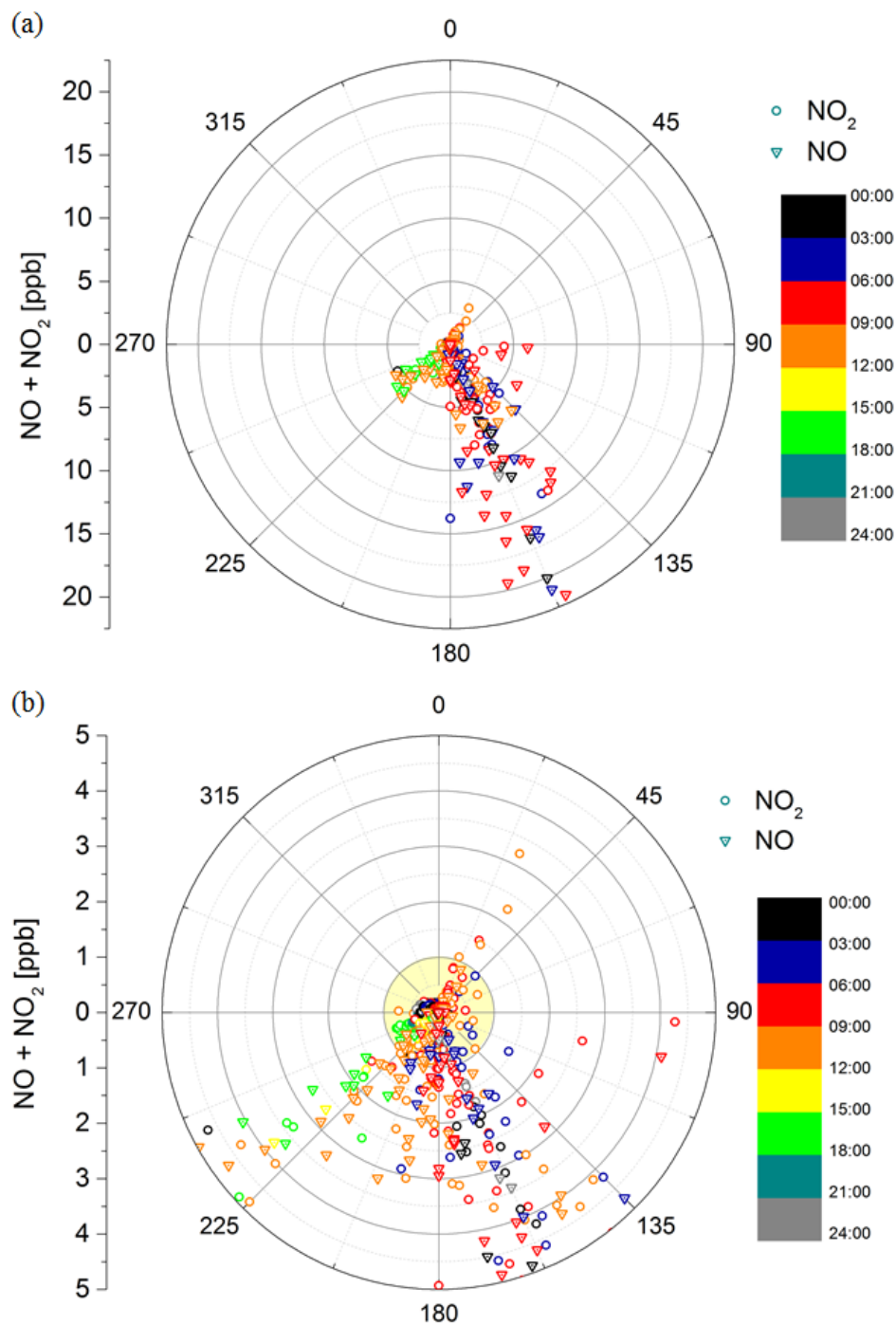
Fig. S2: NOx concentrations in dependence of wind direction and time of day (a) all data, except 5 data points which were between 25 and 50 ppb and b) zoom in to maximum 5 ppb): Strong morning peaks in NO and NO_2 correlate with wind, coming from SSE (Diesel generator), in the afternoon there were also some higher NOx concentrations which correlate with SW-winds (probably indicating some construction or military cars close to the measurement) or NNE to E (street to the base); these high concentrations were not included in further calculations! Only concentrations up to 1 ppb (for NO_2, pale yellow area) and up to 0.5 ppb (for NO) are considered.
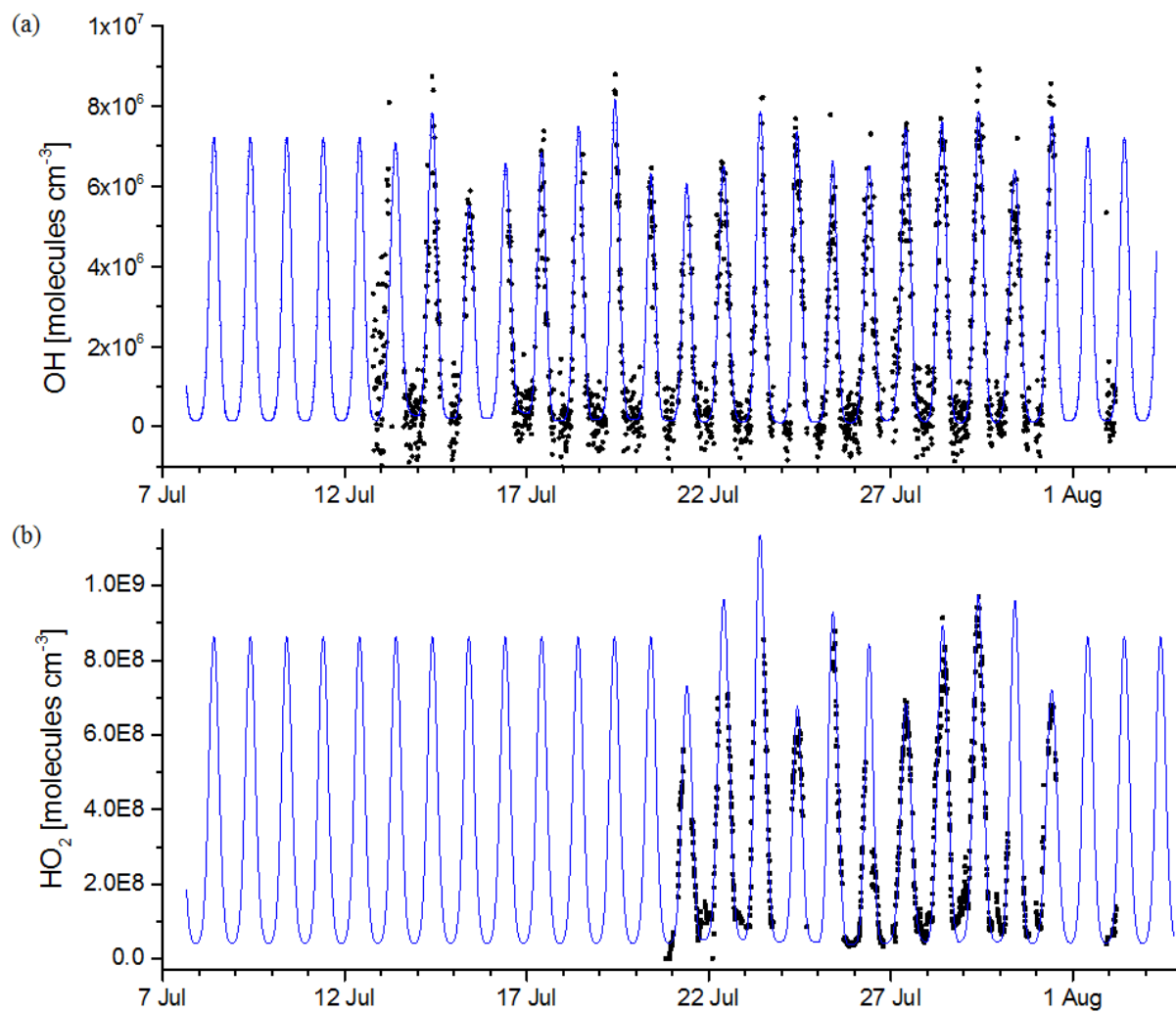
Fig. S3: timeline of OH and HO₂ concentration, black dots indicate real measurement data, blue line is the daily Gauss fit through measurement dots or the average of Gauss fit for those days when no data were available, respectively.
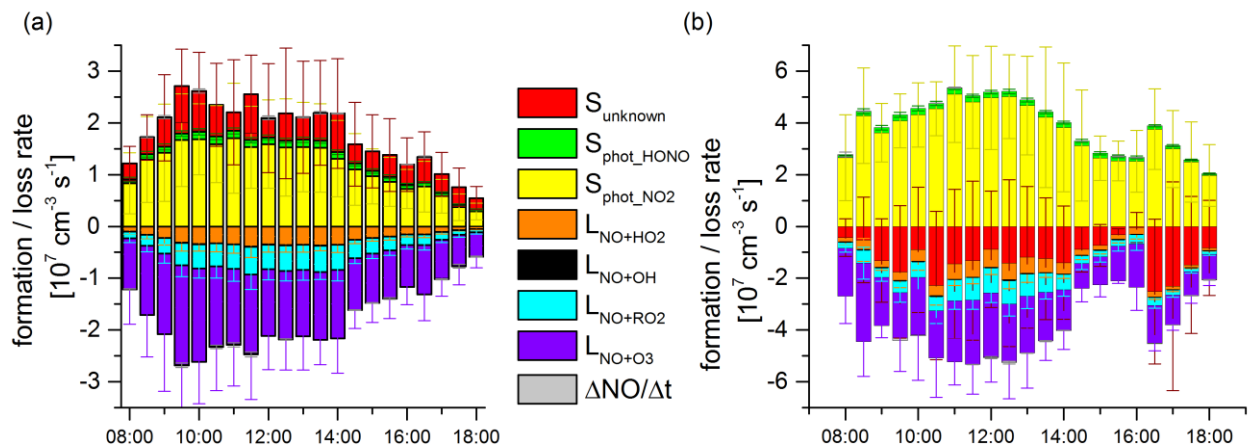
Fig. S4: Contributions of production and loss terms as well as the unknown daytime NO source $S_{unknown}$ for the a) wet and b) dry period. The photolysis of NO_2 has the highest contribution to the NO budget. In the wet period the unknown source of NO is about 40-80% of the photolysis of NO_2. During the dry period there is an unknown sink. The main loss terms are the reaction with O_3 followed by the reaction with RO_2 and HO_2. Error bars indicate standard deviation.