3 Study of the unknown HONO daytime source at an
4 European suburban site during the MEGAPOLI summer
5 field campaigns.

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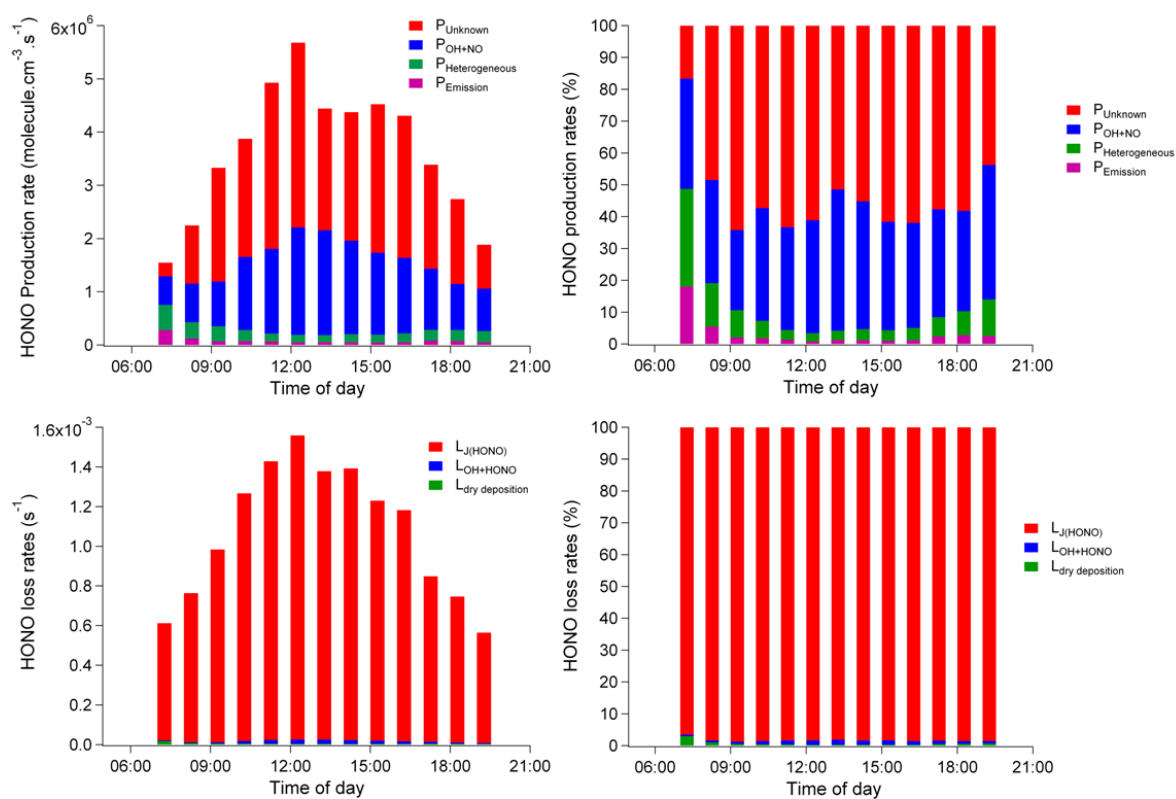
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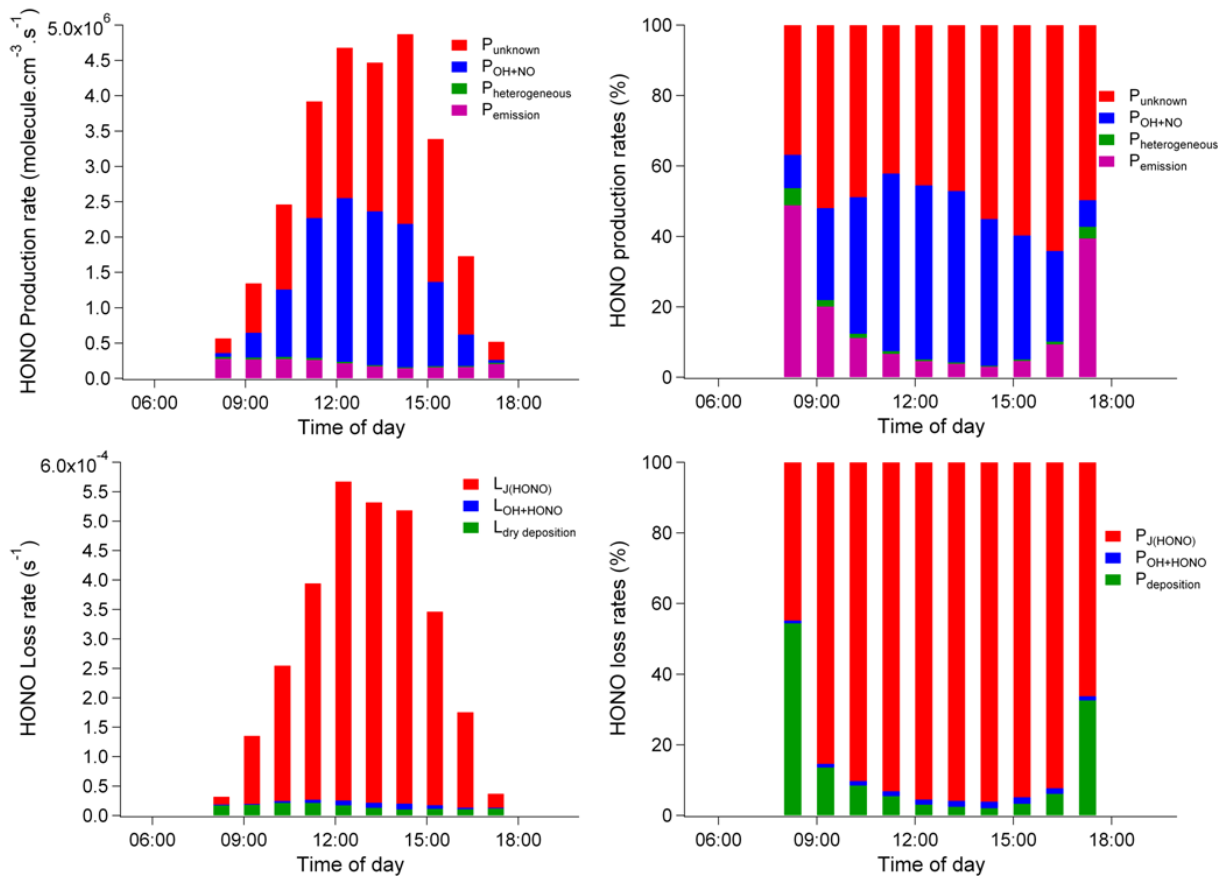
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27   **Supplementary material S1: HONO production and loss rates, including the missing**

28   **HONO source**

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32   Figure S1.1: Contribution of HONO production and loss terms (hourly averaged between 9

33   and 26 July), including the calculated unknown HONO source from equation (4) during the

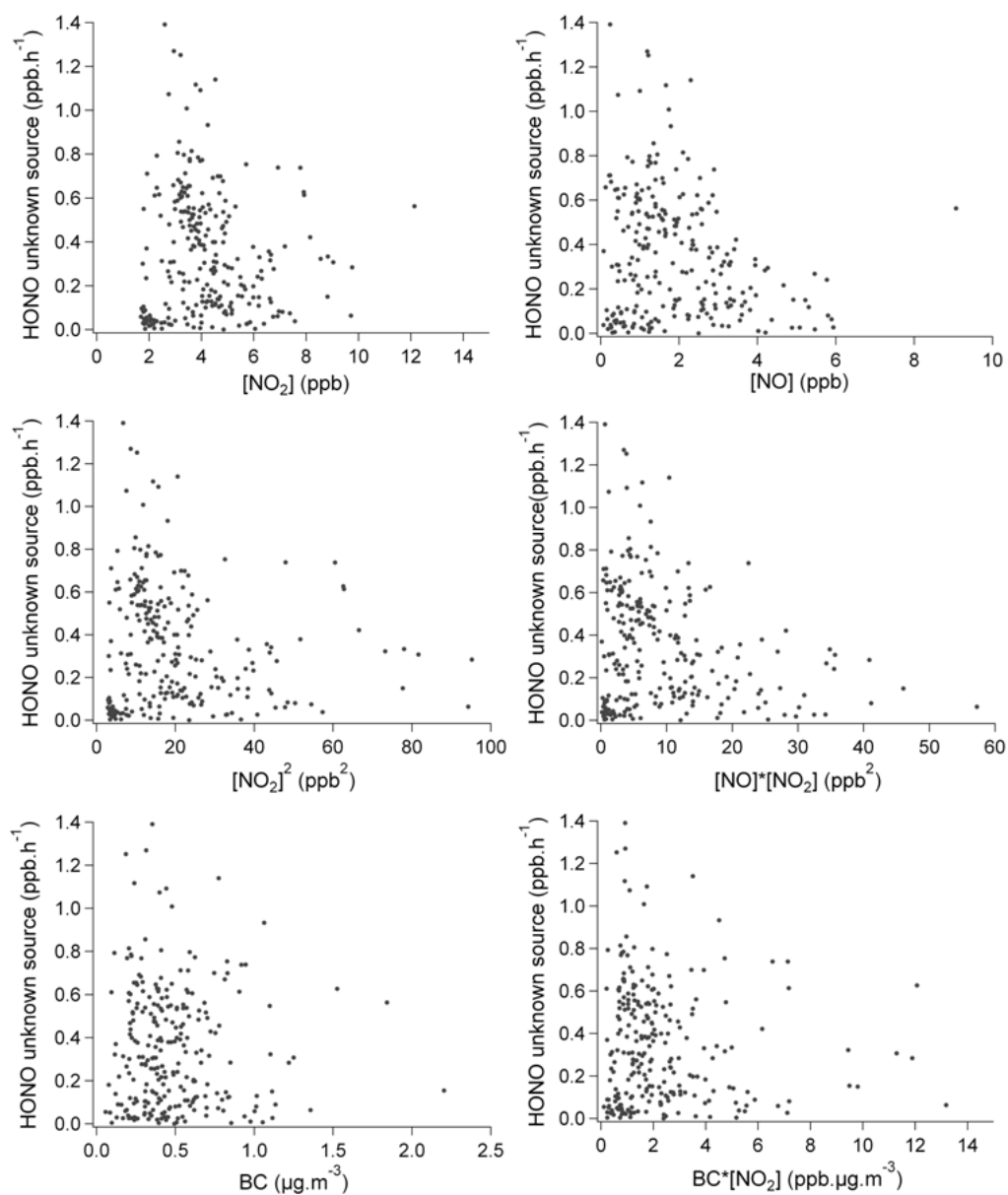34   MEGAPOLI summer campaign.

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Figure S1.2: Contribution of HONO production and loss terms (hourly averaged between 20 of January and 5 of February), including the calculated unknown HONO source from equation (4) during the MEGAPOLI winter campaign.

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41 **Supplementary material S2: Correlation plots between the unknown HONO source and**
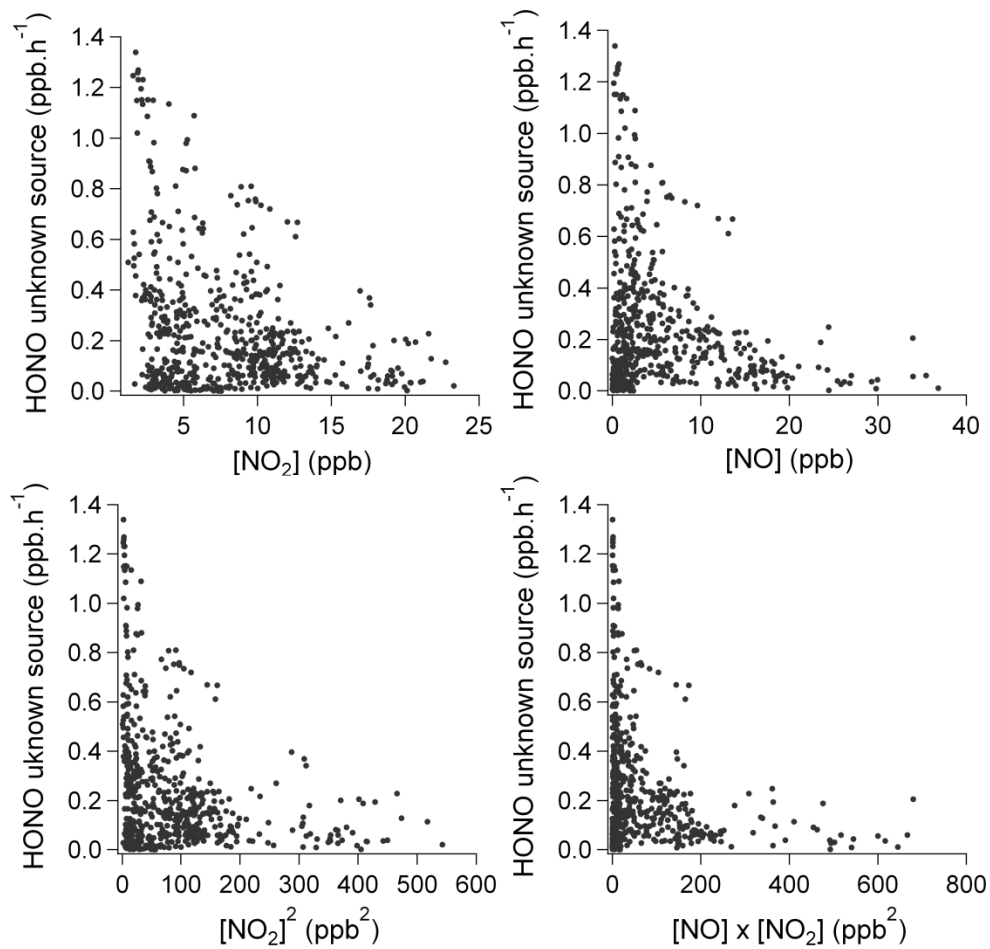
42 **various parameters**

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46 Figure S2.1: Correlation plots between the unknown HONO source and measured [NO$_2$],

47 [NO], [NO$_2$]^2, the product between measured [NO] and [NO$_2$], measured black carbon

48 aerosols concentrations (BC) and the product between measured [NO$_2$] and black carbon

49 aerosols concentrations during the MEGAPOLI summer campaign at SIRTA observatory.
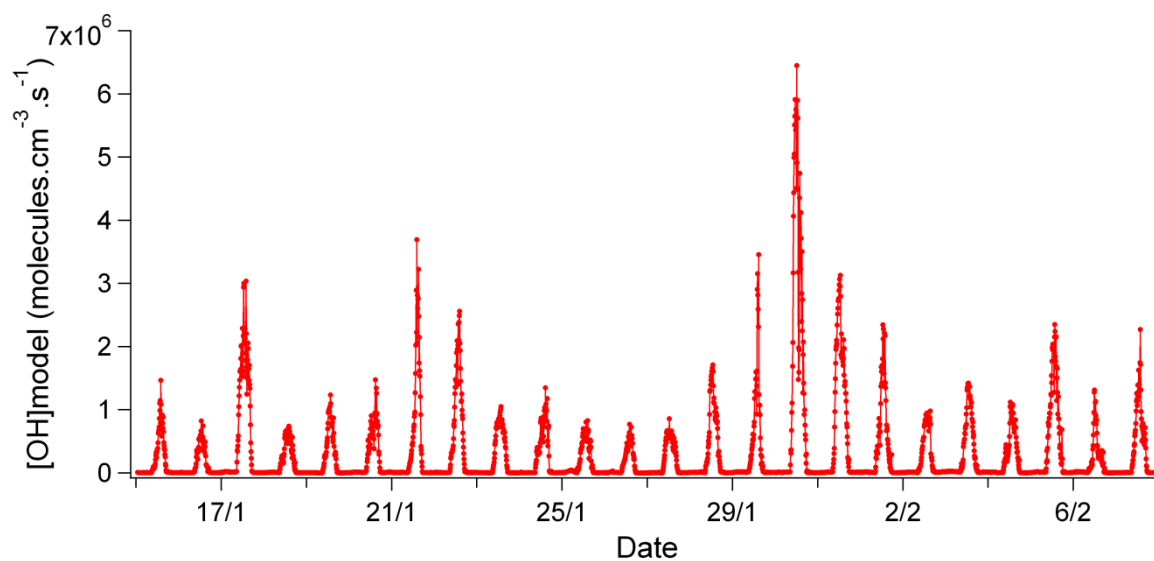
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53 Figure S2.2: Correlation plots between the unknown HONO source and measured [NO$_2$],
54 [NO], [NO$_2$]^2 and the product between measured [NO] and [NO$_2$] during the MEGAPOLI
55 winter campaign at SIRTA observatory.
56

Supplementary material S3: Simulated OH concentrations for the MEGAPOLI winter campaign

Figure S3: Simulated OH concentrations (molecules.cm^{-3}.s^{-1}) for the MEGAPOLI winter campaign, using a 0D-box model containing the Master Chemical Mechanism (v3.1) and constrained with all measured species and parameters. Details of the model are given in Michoud et al., 2012.

67 **References**

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