

**Exp. 5: Isoprene nitrates in gas phase and heterogeneous phase (blind)
(Foreseen May 20th)**

Scheduling	Chamber	Motivation	Measurements
Morning	1. Flushed, dark and humid chamber (RH: 40%). Add isoprene (30 ppb) and NO (100 ppb). 2. Open roof after 1 hour to form OH. Optionally, add Isoprene several times.	Isoprene oxidation by photolytically formed OH leading to organic nitrates in gas phase (yield \leq 10 %).	1. Baseline measurements in the dark. 2. Continuous measurements.
Afternoon	Add α -pinene (30 ppb) and O ₃ (100 ppb) to generate particles.	Study influence of particle-bound organic nitrates.	Continuous measurements
Alternatively			
Morning	Flushed, dark and humid chamber. Generate NO ₃ (add NO to excess O ₃). Add isoprene (30 ppb). Optionally, re-fuel isoprene several times during the day.	Isoprene oxidation by NO ₃ leading to organic nitrates in gas phase (yield \leq 70 %).	Baseline measurements before addition of isoprene. Continuous measurements.

Rollins, A. W., Kiendler-Scharr, A., Fry, J. L., Brauers, T., Brown, S. S., Dorn, H.-P., Dube, W. P., Fuchs, H., Mensah, A., Mentel, T. F., Rohrer, F., Tillmann, R., Wegener, R., Wooldridge, P. J., and Cohen, R. C.: Isoprene oxidation by nitrate radical: alkyl nitrate and secondary organic aerosol yields, *Atmos. Chem. Phys.*, 9, 6685-6703, 2009.

Local Time	GMT	
8:00-08:30	6:00-06:30	Stop chamber flushing. Instruments preparation
08:30-09:00	06:30-07:00	SF ₆ addition. Background measurements.
09:00-09:35	07:00-07:35	Water addition
09:40-10:10	07:40-8:10	Measurements
10:10-10:25	8:10-8:25	Isoprene and NO injection
10:25-11:25	8:25-9:25	Measurements
11:25-11:30	9:25-9:30	Chamber roof opening
11:30-14:00	9:30-12:00	Measurements
14:00-14:05	12:00-12:05	Chamber roof closing
14:05-14:15	12:05-12:15	α -pinene injection
14:15-14:55	12:15-12:55	measurements
14:55-15:00	12:55-13:00	O ₃ injection
15:00-17:00	13:00-15:00	Measurements
17:05-17:45	15:05-15:45	SMPS measurements
17:45	15:45	start chamber flushing