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Lifetimes and Loss mechanisms of NO_3 and N_2O_5 during the AQABA ship campaign

Justin Shenolikar (1), Stephen Borrmann (1), James Brooks (2), Efstratios Bourtsoukidis (1), Eoghan Darbyshire (2), Frank Drewnick (1), Philipp Eger (1), Lisa Ernle (1), Friederike Fachinger (1), Horst Fischer (1), Ivan Tadic (1), Jonathan Williams (1), Jos Lelieveld (1), and John Crowley (1)

(1) Max Planck Institute for Chemistry, Mainz, Germany (justin.shenolikar@mpic.de), (2) University of Manchester, Manchester, United Kingdom

We report on measurements of NO_2, NO_3, and N_2O_5 made by thermal-dissociation Cavity-Ringdown Spectroscopy (TD-CRDs) taken during the Air Quality and Climate Change in the Arabian BAsin (AQABA) campaign in June-August 2017. N2O5 was observed on a total of 18 nights and ranged from below the limit of detection ($\sim$6 ppt) to $\sim$200 ppt. In this data set, which covers the Mediterranean Sea, Red Sea, Arabian Sea and Arabian Gulf regions, we derive steady-state lifetimes (τ_{ss}) of NO_3 and N_2O_5 and perform an analysis on the night-time loss processes due to direct gas-phase reaction with volatile organic compounds (VOCs), reaction with NO, heterogeneous loss processes (e.g. reaction of N_2O_5 on aerosol) and dry deposition.