

Volatile Organic Compound fluxes in a subarctic peatland and lake

Roger Seco^{1,2,*}, Thomas Holst^{1,3}, Andreas Westergaard-Nielsen², Tao Li^{1,2}, Tihomir Simin^{1,2}, Joachim Jansen^{4,5}, Patrick Crill^{4,5}, Thomas Friborg², Jutta Holst³, Janne Rinne³, Riikka Rinnan^{1,2}

D640 | EGU2020-9007

ICOS station (palsa)

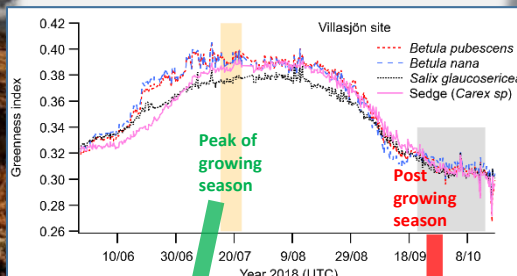
Stordalen mire

2 EC measurement sites

near Abisko (Sweden)

68°20' N, 19°03' E

Villasjön (lake and permafrost-free fen)



ICOS site

- Isoprene was the dominant net emission

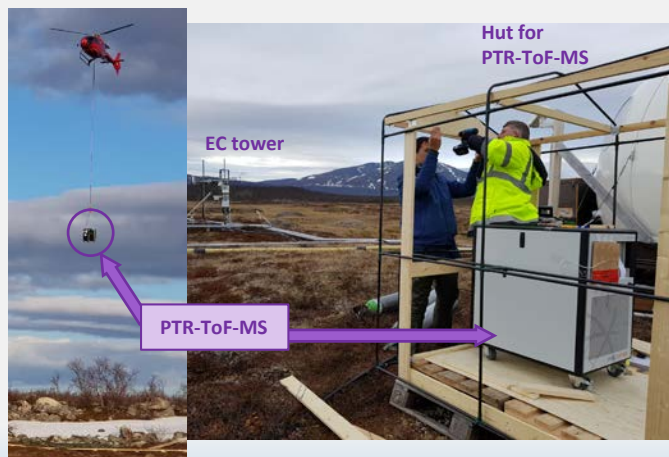
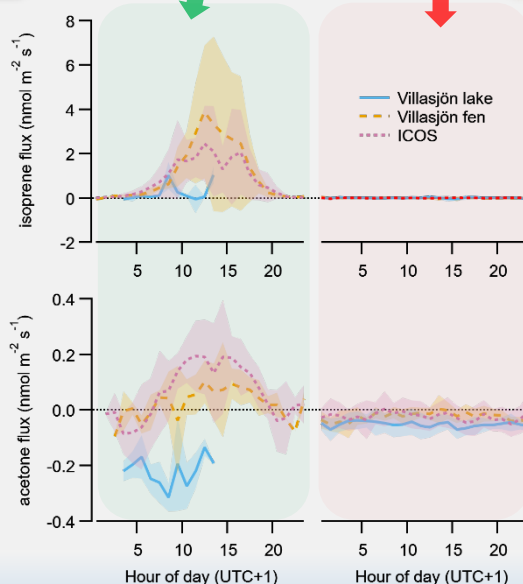
Depending on wind direction, Villasjön VOC fluxes were partitioned between:

FEN

- Isoprene was the dominant net emission in July (93 $\mu\text{mol m}^{-2} \text{day}^{-1}$) and was drastically reduced after the growing season
- Acetone showed small net emission in July and net deposition after the growing season

LAKE

- Acetone showed deposition in both periods, especially in the peak of the growing season ($-19 \mu\text{mol m}^{-2} \text{day}^{-1}$)
- Deposition flux of acetone was correlated with its atmospheric mixing ratios



¹ Dep. Biology, University of Copenhagen (DK) | ² CENPERM, Dep. Geosciences and Natural Resource Management, University of Copenhagen, (DK)

³ Dep. Physical Geography & Ecosystem Science, Lund University (SE) | ⁴ Dep. Geological Sciences, Stockholm University (SE)

⁵ Bolin Centre for Climate Research, Stockholm (SE)

*Contact: email@rogerseco.cat

© Authors. All rights reserved

UNIVERSITY OF COPENHAGEN