



Supplement of

How to trace the origins of short-lived atmospheric species: an Arctic example

Anderson Da Silva et al.

Correspondence to: Anderson Da Silva (anderson.da-silva@latmos.ipsl.fr)

The copyright of individual parts of the supplement might differ from the article licence.



Figure S1. Ratio maps of the fifteen cases used in the tracer experiment. Each column corresponds to one a the five Arctic stations, and each row to one of the three tracers. The maps show the regions of emission identified by the standard ratio method. One can easily notice that the identified regions do not stick to the emission regions of the tracers.



Figure S2. Same as Fig. S1 but for the improved ratio method. Composite ratio maps of the fifteen cases used in the tracer experiment. Each column corresponds to one a the five Arctic stations, and each row to one of the three tracers. The maps show the regions of emission identified by the improved ratio method that benefited of the three modifications suggested in Sect. 3.3: background subtraction, FPES filtering, and composite ratio.



Figure S3. Comparison of the results obtained with different combinations of modifications to the standard ratio method. (a) is background subtraction and composite ratio, (b) is background subtraction alone, (c) is composite ratio and FPES filtering, (d) is composite ratio alone, (e) is FPES filtering and background subtraction, (f) is FPES filtering alone. Every panel presents the detection results for a specific tracer and for the five stations. The bars represent the contributions of each surface type to the detection (light blue for sea ice, blue for open ocean, green for continent). For every pair of tracer and station, the level of success is showed above the corresponding bars. The averaged result of each case is reported in Table 4.