

Supplemental Information for

SOURCE ATTRIBUTION OF BLACK CARBON IN ARCTIC SNOW

by

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This SI is 4 pages long, including the cover page, and contains three figures.

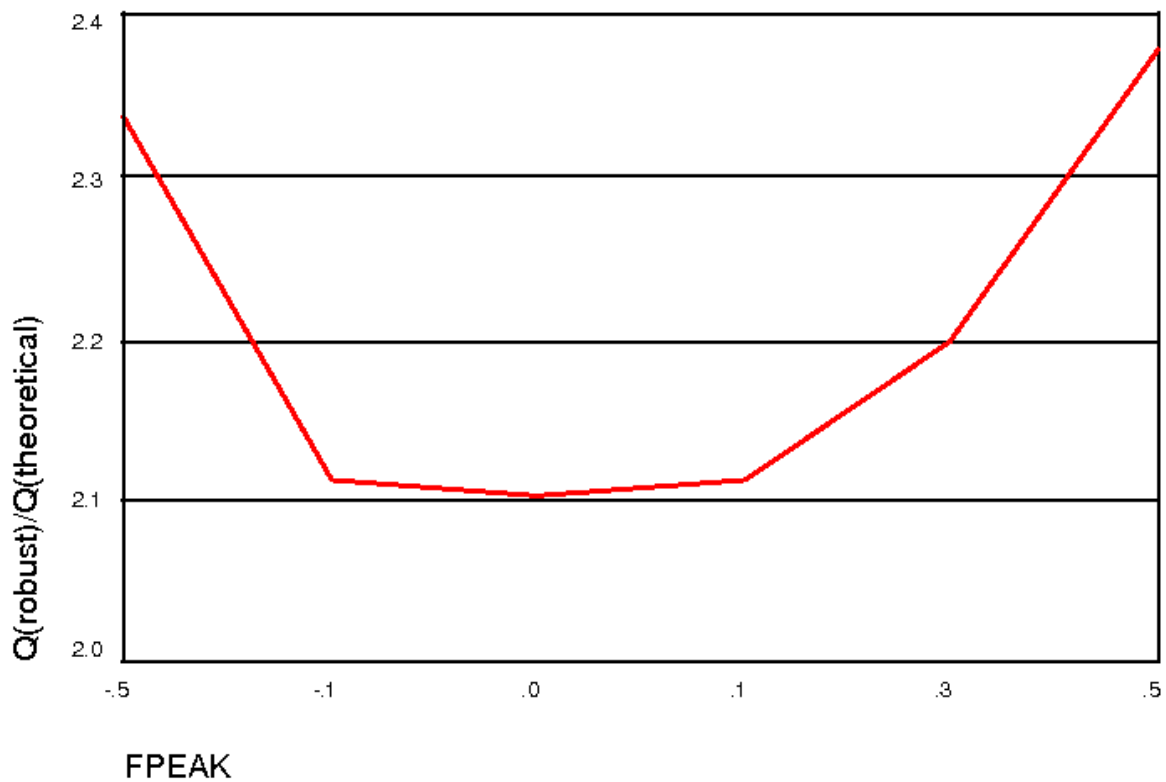


Figure S1. Plot of the ratio of $Q(\text{robust})$ to $Q(\text{theoretical})$ against values of the FPEAK parameter (note the non-linear scale) for the four source PMF solution to the 2008 data set (Eastern Siberia, Greenland and the vicinity of the North Pole). The well-defined minimum suggests little rotational ambiguity in the solution.

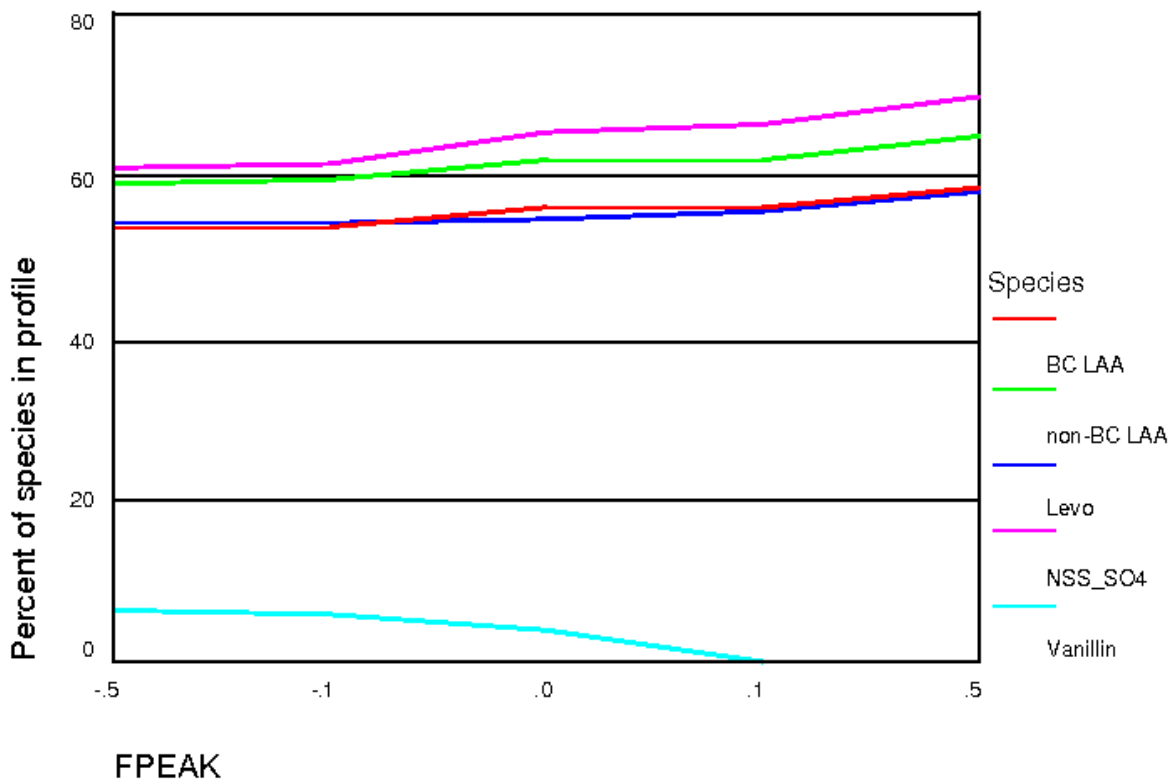


Figure S2. Plot of component loadings, in terms of percentage of key species present in the given factor, for the crop and grass burning factor in the 2008 data set versus the value of FPEAK (note the non-linear scale) used in rotational sensitivity studies. The crop and grass burning factor was selected because of its high loading for both BC and non-BC LAA. Only vanillin shows any marked change with FPEAK value but is always low; hence the vanillin to levoglucosan ratio is always low.

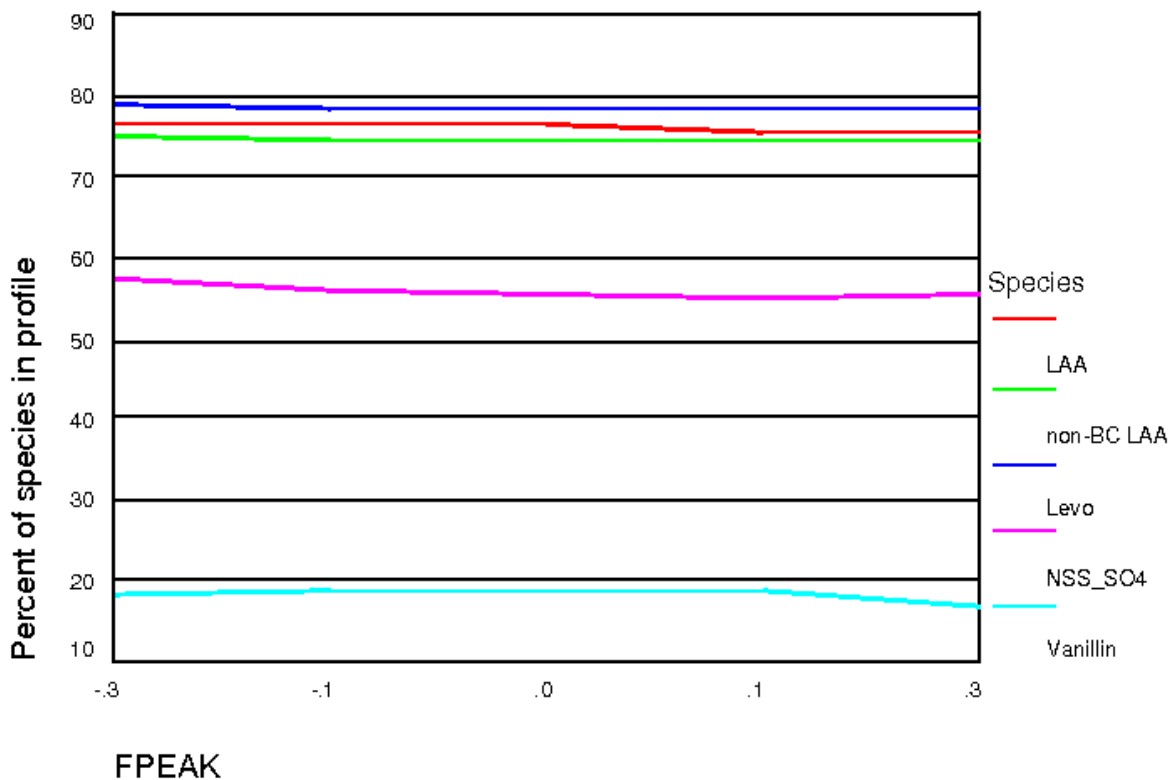


Figure S3. Plot of component loadings, in terms of percentage of key species present in the given factor, for the crop and grass burning factor in the 2009 data set versus the value of FPEAK (note the non-linear scale) used in rotational sensitivity studies. The crop and grass burning factor was selected because of its high loading for both BC and non-BC LAA. There is essentially no change in the species loadings as a function of FPEAK value.