

Interactive comment on “First-year sea-ice contact predicts bromine monoxide (BrO) levels better than potential frost flower contact” by W. R. Simpson et al.

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Simpson et al. present a very interesting study investigating the history of airmasses resulting in BrO formation. The manuscript should be published in ACP after considering the reviewers' suggestions, plus a few additional comments as listed below:

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1 Specific comments

- If first-year sea ice, rather than PFF conditions cause bromine explosions, this may suggest that a different process is involved in the generation of aerosols from sea water. Could you comment on if and how this would affect the idea of carbonate precipitation, as suggested in a recent paper (Sander et al. ACP 6, 4653-4658, 2006).
- Abstract: You call the correlation to PFF “weakly negatively correlated”. Given that the correlation coefficient is as low as $R^2 = 0.04$, I think it would be more appropriate to say that you found no correlation at all.

2 Technical corrections

- Introduction: You cite McConnell et al. (1992) for the autocatalytic reaction pathway. However, there is no autocatalytic reaction pathway in that paper. I suggest to move the citation upwards to the first half of the sentence (“... come from salts containing bromide...”).
- Please define all acronyms when they are first used, e.g.: DOY, ASI, AMSR-E.
- Page 11056, line 15: Add the degree signs.
- According to the IUPAC Recommendations (Schwartz & Warneck “Units for use in atmospheric chemistry”, Pure & Appl. Chem., 67(8/9), 1377-1406, 1995), the usage of “ppbv” and “pptv” is discouraged for several reasons. Instead, “nmol/mol” and “pmol/mol” should be used for gas-phase mole fractions. I suggest to replace the obsolete units.

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- Please check for correct spelling, especially for the words with diacritics, e.g.: Dominé, Hönninger, Ny-Ålesund.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 11051, 2006.

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