

General comments

This work presents an unprecedented data set from a full year of ozone monitoring onboard a frozen-in boat in the Arctic Ocean. These for sure were very challenging measurements. The authors present a convincing case that this experiment was carefully prepared and that data are of good quality. The primary value of this work is the presentation of this ozone record, as it tremendously expands upon previous data, which have been limited to monitoring at coastal arctic locations. Therefore, these data present the unequivocal evidence that surface layer ozone depletion during spring is omnipresent over the vast arctic polar sea ice region, and not just along the coastal zone.

While these measurements are of high value and deserve to be published in ACP, this reviewer is a bit disappointed about the analysis and interpretation of these data. The discussion section to a large extent revisits information that has been presented extensively in previous literature. The day to day, event to event evaluation of the ozone data is lengthy, and lacks a clear direction. This section could possibly be improved by defining subsections with dedicated headlines that focus on particular conclusions derived from this study. It is unfortunate that there is no consideration of boundary layer height data and discussion. This reviewer finds the presentation of "Origin of Observed Air", i.e. Fig. 5 and its discussion deceiving and oversimplified, as for sure sampled air does not, as shown in this figure, originate from a single/particular point and time. Most colleagues have now reverted to using dispersion models, i.e. FLEXPART, rather than back trajectory analyses, for better representation of the air mass flow path. I encourage these authors to explore this powerful tool for interpretation of these data.

Specific comments:

Please provide more details on the "zero trap" and inlet height.

Please define 'hours of daylight' (sunrise to sunset?).