

Interactive comment on “Unusually low ozone, HCl, and HNO₃ column measurements at Eureka, Canada during winter/spring 2011” by R. Lindenmaier et al.

Anonymous Referee #3

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General comments

This paper is nicely written corresponding to a large data set.

It summarizes several other work regarding stratospheric ozone depletion, providing a good scientific context.

I think the paper can be published with only minor modifications, if any. .

I however have some difficulty in understanding the main objective of the paper. I guess it is to show that 2011 was an unusually cold year above Eureka (what about elsewhere?), with chlorine activation, denitrification and ozone depletion, as shown qualitatively from

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the FTIR data, and quantitatively from the slimcat data.

Personally I think the paper is a little long on the FTIR side, since most of the data is used only qualitatively. Can the same information could be given in a shorter manner or can more quantitative data be retrieved from the FTIR data?

I also miss some discussion around the slimcat data, over how long time period the passive tracer can be used in a good manner. In the past I have been involved in similar studies with older versions of slimcat showing a drift between the passive and active ozone after the end of the season. This is not the case here, but I would have liked some critical discussion since it is the highlights of the paper.

In the conclusion the authors claim a 35% ozone depletion being the highest in 15 years. I can not find that they refer how the depletion was measured the other years, also slimcat?

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 1053, 2012.

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