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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Halogen species record Antarctic sea ice extent over glacial-interglacial periods" *by* A. Spolaor et al.

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REFEREE 1: ANSWER

%Brdep is anti-correlated to the temperature proxy, during the warmer periods the boundary layer dynamics and mesoscale transport may have been different. This in turn may have altered wind speeds and thus transport time scales from the Antarctic coast to TD. Have the authors considered such possibility and how would that affect the interpretation of the measurements?

We thank the referee for recognizing this critical assumption in our work. The transport patterns as well as the air mass travel time from the coast to Talos Dome have been thoroughly investigated (Scarchilli et al., 2011; Sala et al., 2008). The main at-

mospheric circulation seems to be quite similar between glacials and interglacials as well the dominant wind dynamics. Many papers (Petit and Delmonte, 2009;Fischer et al., 2007) suggest that no appreciable difference in wind speed and direction and in consequence transport pattern was likely similar between glacial and interglacial time periods. Dramatic changes in the wind direction and speed could have modified the travel time and our consequent data interpretation. The present literature data suggest a similar wind pattern between glacial and interglacial periods.

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