Home
Online Library ACP
- Recent Final Revised Papers
- Volumes and Issues
- Special Issues
- Library Search
- Title and Author Search

Online Library ACPD
Alerts & RSS Feeds
General Information
Submission
Review
Production
Subscription
Comment on a Paper



Volumes and Issues | Contents of Issue 14

Atmos. Chem. Phys., 9, 4545-4557, 2009
www.atmos-chem-phys.net/9/4545/2009/


# Ozone in the boundary layer air over the Arctic Ocean: measurements during the TARA transpolar drift 2006 – 2008

J. W. Bottenheim[1], S. Netcheva[1], S. Morin[2,*], and S. V. Nghiem[3]
[1]Environment Canada, 4905 Dufferin Street, Toronto, ON M3H 5T4, Canada
[2]LGGE, CNRS – UJF Grenoble, 38400 St. Martin d'Hères, France
[3]Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109, USA
[*]now at: CEN, CNRM/GAME, Météo-France – CNRS, 38400 St. Martin d'Hères, France

Abstract. A full year of measurements of surface ozone over the Arctic Ocean far removed from land is presented (81 ° N – 88 ° N latitude). The data were obtained during the drift of the French schooner TARA between September 2006 and January 2008, while frozen in the Arctic Ocean. The data confirm that long periods of virtually total absence of ozone occur in the spring (mid March to mid June) after Polar sunrise. At other times of the year, ozone concentrations are comparable to other oceanic observations with winter mole fractions of ca. 30 – 40 nmol mol$^{-1}$ and summer minima of ca. 20 nmol mol$^{-1}$. Contrary to earlier observations from ozone sonde data obtained at Arctic coastal observatories, the ambient temperature was well above −20 ° C during most ODEs (ozone depletion episodes). Backwards trajectory calculations suggest that during these ODEs the air had previously been in contact with the frozen ocean surface for several days and originated largely from the Siberian coast where several large open flaw leads and polynyas developed in the spring of 2007.

Final Revised Paper (PDF, 1516 KB) | Discussion Paper (ACPD)

Citation: Bottenheim, J. W., Netcheva, S., Morin, S., and Nghiem, S. V.: Ozone in the boundary layer air over the Arctic Ocean: measurements during the TARA transpolar drift 2006 – 2008, Atmos. Chem. Phys., 9, 4545-4557, 2009. Bibtex | EndNote | Reference Manager



Search ACP
Library Search
Author Search

News
- New Alert Service available
- Sister Journals AMT & GMD
- Financial Support for Authors
- Public Relations & Background Information

Recent Papers
01 | ACP, 22 Jul 2009: NASA LaRC airborne high spectral resolution lidar aerosol measurements during MILAGRO: observations and validation

02 | ACP, 22 Jul 2009: Observations of $NO_x$, ΣPNs, ΣANs, and $HNO_3$ at a Rural Site in the California Sierra Nevada Mountains: summertime diurnal cycles

03 | ACP, 22 Jul 2009: Size-dependent activation of aerosols into cloud droplets at a subarctic background site during the second Pallas