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 6 | Special Issue

Atmos. Chem. Phys., 5, 1605-1622, 2005
www.atmos-chem-phys.net/5/1605/2005/

Variability of the Lagrangian turbulent diffusion in the lower stratosphere

B. Legras[1], I. Pisso[1], G. Berthet[2], and F. Lefèvre[2]
[1]Laboratoire de Météorologie Dynamique, UMR8539, Paris, France
[2]Service d'Aéronomie, UMR7620, Paris, France

Abstract. Ozone and nitrous oxide are measured at high spatial and temporal resolution by instruments flying on the ER-2 NASA research aircraft. Comparing the airborne transects to reconstructions by ensemble of diffusive backward trajectories allows estimation of the average vertical Lagrangian turbulent diffusion experienced by the air parcels. The resulting estimates show large Lagrangian diffusion of the order of 0.1in the surf zone outside the polar vortex and smaller values of the order of 0.01 inside. Locally, large variation of Lagrangian diffusion occurs over mesoscale distances. It is found that high temporal resolution (3h or less) is required for off-line transport calculations and that the reconstructions are sensitive to spurious motion in standard analysed winds.

Final Revised Paper (PDF, 2423 KB) | Discussion Paper (ACPD)

Citation: Legras, B., Pisso, I., Berthet, G., and Lefèvre, F.: Variability of the Lagrangian turbulent diffusion in the lower stratosphere, Atmos. Chem. Phys., 5, 1605-1622, 2005. Bibtex | EndNote | Reference Manager

Copernicus Publications
The Innovative Open Access Publisher

Search ACP
Library Search
Author Search

News
- Sister Journals AMT & GMD
- Financial Support for Authors
- Journal Impact Factor
- Public Relations & Background Information

Recent Papers
01 | ACPD, 10 Feb 2009: Bromocarbons in the tropical marine boundary layer at the Cape Verde Observatory – measurements and modelling

02 | ACPD, 10 Feb 2009: Long-term study of VOCs measured with PTR-MS at a rural site in New Hampshire with urban influences

03 | ACPD, 10 Feb 2009: Validation of urban NO_2 concentrations and their diurnal and seasonal variations observed from space (SCIAMACHY and OMI