

## **Paul-Scherrer-Institut, Villigen, Switzerland (PSI)**

### **Expertise and Experience**

The Paul-Scherrer-Institut (PSI) has much experience in aerosol and gas-phase chemistry research. The institute uses a large variety of physical and chemical analytical facilities in its laboratory work (e.g. physico-chemical characterisation of freshly emitted diesel and gasoline exhaust particles) and its field experiments (e.g. particulate emissions in road tunnels, formation of photo-oxidants and secondary aerosols in urban photochemical plumes, mobile measurements using a van equipped with state of the art gas and aerosol instrumentation). Very recently, a large photoreactor of 27 m<sup>3</sup> equipped with a comprehensive set of analytical devices was built in the institute. The combined expertise in aerosol and gas-phase chemistry research is particularly valuable for addressing the project goals.

### **Professional Experience**

**PD Dr. Urs Baltensperger** is the head of the Laboratory of Atmospheric Chemistry at PSI. His main interest is in the formation and transformation of aerosols as well as the study of their impact. He is the Chairman of the Scientific Advisory Group for Aerosols of the Global Atmosphere Watch (GAW) aerosol program of WMO at the Jungfrauoch. He also is president of the Commission for Atmospheric Chemistry and Physics of the Swiss Academy of Natural Sciences. He is author and co-author of more than 90 peer-reviewed journal articles.

**Dr. André Prévôt** is the head of the gas phase chemistry group at PSI. He has more than 10 years experience in tropospheric chemistry research related to ozone, VOC, meteorology and aerosols. His group has been involved in several EC and EUROTRAC projects. The expertise ranges from various state-of-the-art measuring techniques (GC, MS, fluorescence, etc.) used on aircraft, mobile on-road laboratories and at the smog chamber to 3D and 1D photochemical modelling. He is author and co-author of more than 30 peer-reviewed journal articles.

### **RECENT/CURRENT EC PROJECTS**

ARTEMIS	Assessment of road transport emission models and inventory system (GRD1-1999-10429)
CARBOMONT	Effects of land-use changes on sources, sinks and fluxes of carbon in European mountain areas (EVK2 – CT2001-00125)
CREATE	Construction, use, and delivery of an European aerosol database (EVK2-CT-2002-00173)
DIFUSO	Diesel fuel and soot: Fuel formulation and its atmospheric implications (ENV4-CT97-0390)
FORMAT	Formaldehyde as a tracer of photo oxidation in the troposphere (EVK2-CT-2001-00120)
PARTEMIS	Measurement and prediction of emissions of aerosols and gaseous precursors from gas turbine engines (GRD1-1999-10891)
SINGADS	Synthesis of integrated global aerosol data sets (ENV4-CT98-0780)
VOTALP II	Vertical ozone transports in the Alps (ENV4-CT97-0413)

## RECENT PUBLICATIONS

- Andreani-Aksoyoglu, S., Keller, J., Dommen, J., Prevot, A. S. H. (2003) Modelling of air quality with CAMx: A case study in Switzerland, *Water Air Soil Poll.*, (in press).
- Baltensperger, U., Streit, N., Weingartner, E., Nyeki, S., Prévôt, A.S.H., van Dingenen, R., Virkkula, A., Raes, F., ten Brink, H., Blatter, A., Neftel, A., Gägeler, H.W. (2002) Urban and rural aerosol characterization of summer smog events during the PIPAPO field campaign in Milan, Italy, *J. Geophys. Res.* **107**, doi: 10.1029/2001JD001292.
- Bukowiecki, N., Dommen, J., Prévôt, A.S.H., Richter, R., Weingartner, E., Baltensperger, U. (2002) A mobile pollutant measurement laboratory – measuring gas and aerosol ambient concentrations with high spatial and temporal resolution, *Atmos. Environ.* **36**, 5569-5579.
- Dommen, J., Prevot, A. S. H., Neining, B., Bäumle, M. (2002) Characterization of the photooxidant formation in the metropolitan area of Milan from aircraft measurements, *J. Geophys. Res.* **107**, doi 10.1029/2000JD000283.
- Gutzwiller, L., Arens, F., Baltensperger, U., Gägeler, H.W., Ammann, M. (2002) Significance of semivolatile diesel exhaust organics for secondary HONO formation, *Environ. Sci. Technol.* **36**, 677-682.
- Gysel, M., Weingartner, E., Baltensperger, U. (2002) Hygroscopicity of aerosol particles at low temperatures. 2. Theoretical and experimental hygroscopic properties of laboratory generated aerosols, *Environ. Sci. Technol.* **36**, 63-68.
- Neftel, A., Spirig, C., Prévôt, A. S. H., Furger, M., Stutz, J., Vogel, B., Hjorth, J. (2002) Sensitivity of photooxidant production in the Milan Basin: An overview of results from a EUROTRAC-2 Limitation of Oxidant Production field experiment, *Journal of Geophysical Research* **107**, doi: 10.1029/2001JD001263.
- Nessler, R., Bukowiecki, N., Henning, S., Weingartner, E., Calpini, B., Baltensperger, U. (2003) Simultaneous dry and ambient measurements of aerosol size distributions at the Jungfraujoch, *Tellus* (in press).
- Weber, R. O., Prevot, A. S. H. (2002) Climatology of ozone transport from the free troposphere into the boundary layer during North Foehn in the Southern Alps, *J. Geophys. Res.* **107**, doi: 10.1029/2001JD000987.
- Weingartner, E., Gysel, M., Baltensperger, U. (2002) Hygroscopicity of aerosol particles at low temperatures. 1. New low-temperature H-TDMA instrument: Setup and first applications, *Environ. Sci. Technol.* **36**, 55-62.