



Wilhelm and Else Heraeus Seminar

Determination of Atmospheric Aerosol Properties Using Satellite Measurements

Physikzentrum Bad Honnef, Hauptstrasse 5, 53604 Bad Honnef, Germany

(www.pbh.de)

August 16-19, 2009

The WE-Heraeus Seminar on *Determination of Atmospheric Aerosol Properties using Satellite Measurements* will be hosted by the Physics Center Bad Honnef (Hauptstrasse 5, D-53604 Bad Honnef, Germany, www.pbh.de) on August 16-19, 2009. The seminar is supported by the The Wilhelm and Else Heraeus Foundation.

The aim of the seminar is to bring together experts in the area of aerosol satellite remote sensing to discuss current problems and advances with respect to quantification of local and global aerosol characteristics derived from satellite top-of-atmosphere spectral, angular, and polarimetric measurements. The focus of the meeting is on the aerosol retrievals over land.

The proceedings of the seminar will be per-reviewed and published as a book by Springer (Berlin). The templates can be found at www.iup.physik.uni-bremen.de/~lsr. Original papers and reviews on satellite aerosol remote sensing are welcome. The publication must contain about 40 double-spaced pages in a format similar to that presented at www.iup.physik.uni-bremen.de/~lsr. It must be submitted to the organizing committee using e-mail: alexk@iup.physik.uni-bremen.de before October 1st, 2009. The camera-ready copy is not required.

The registration form (see below) should be returned before March 1st, 2009. Please, send the form and also your 1 page abstract (preferably, as a Word file) to Alexander Kokhanovsky using the following e-mail address: alexk@iup.physik.uni-bremen.de. The template for the abstract is given below. The abstracts will be evaluated by the scientific organizing committee. There will be no registration fee. The attendances will be provided with a living room and meals free of charge at The Physikzentrum Bad Honnef (PBH). The number of participants is limited to 50.

The Physikzentrum Bad Honnef is run by the German Physical Society and supported by the University of Bonn and the state North Rhine-Westphalia. The stately mansion housing the Physikzentrum is surrounded by a park at the foot of the Siebengebirge ("the Seven Hills") on the right bank of the Rhine River. In the immediate neighborhood an extensive net of hiking-paths in the Germany's oldest nature preserve invites pleasant short or long walks. Public transport offers convenient access to nearby cities of Bonn (15 km) and Cologne (40 km) with many cultural and scientific attractions. Due to its central location PBH is easy to reach from all European countries. More details are given at <http://www.pbh.de>.

Local Organizing Committee

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Scientific Organizing Committee

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G. de Leeuw, Finnish Meteorological Institute, Helsinki, Finland
D. Diner, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, USA
R. Kahn, Goddard Space Flight Center, Greenbelt, MD, USA
S. Kinne, Max Planck Institute for Meteorology, Hamburg, Germany
D. Tanre, Laboratoire d'Optique Atmosphérique, Villeneuve d'Ascq, France
W. von Hoyningen-Huene, Institute of Environmental Physics, University of Bremen, Germany

Invited speakers

de Almeida Castanho, A. D., Massachusetts Institute of Technology, EAPS, 77 Massachusetts Avenue, B54-1411, Cambridge, MA 02139, USA
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Yang, P., Department of Atmospheric Sciences, Texas A&M University, 3150 TAMU, College Station, TX 77843-3150, USA

Zege, E. P., Institute of Physics, Pr. Nezaleznosti 70, Minsk, Belarus

REGISTRATION FORM (please, return before March 1st, 2009)

Last Name :

First Name :

Affiliation:

Address :

Tel. :

Fax :

E-mail :

I plan to attend the WE-Heraeus-Seminar on Determination of Atmospheric Aerosol Properties using Satellite Measurements

I will submit the paper for Proceedings before October 1st, 2009

I propose to make a presentation at the Seminar untitled:

I prefer to make oral presentation

I prefer to make poster presentation

There is no preference for oral or poster presentation

Template for the Abstract:

The determination of aerosol optical thickness over Germany using different satellite algorithms and instruments: a case study

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An intercomparison of the aerosol optical thickness (AOT) at $0.55 \mu\text{m}$ retrieved using different satellite instruments and algorithms based on the analysis of backscattered solar light is performed for a single scene over Germany (7-12E, 49-53N) on October 13th, 2005(10:00-13:30UTC depending on the instrument used). The scene covers a densely populated area of central Europe with Nurnberg at the southern and Bremen at the northern boarder of the scene. A large portion of the scene includes hills covered by forest (e.g., Harz). In addition, agricultural areas covered by vegetation and also bare soil are present in the scene studied. It is found that on the scale of a single pixel there can be large differences in AOT retrieved over land using different retrieval techniques and instruments. However, these differences are not as pronounced for the average AOT over land. For instance, the average AOT at $0.55 \mu\text{m}$ for the area 7-12E, 49-53N was equal to 0.14 for MISR, NASA MODIS and POLDER algorithms. It is smaller by 0.01 for the ESA MERIS aerosol product and larger by 0.04 for the MERIS BAER algorithm. AOT as derived using AATSR gives on average larger values as compared to all other instruments, while SCIAMACHY retrievals underestimate the aerosol loading. These discrepancies are explained by uncertainties in a priori assumptions used in the different algorithms and differences in the sensor characteristics. MERIS retrievals gave AOTs closest to those measured by ground-based sunphotometers operating in the scene under study at the moment of satellite measurements.