Please correct your address if necessary)

Lecture Series Secretary
von Karman Institute for Fluid Dynamics
72 Chaussée de Waterloo
B-1640 Rhode-St-Genèse
Belgium

von KARMAN INSTITUTE
FOR FLUID DYNAMICS

ATMOSPHERIC BOUNDARY LAYER FLOWS IN AIR POLLUTION MODELLING

LECTURE SERIES

May 19 - 23, 2008

von Karman Institute for Fluid Dynamics
72, Chaussée de Waterloo
1640 Rhode-Saint-Genèse, Belgium

Phone: +32(0)2 359 96 04 - Fax: +32(0)2 359 96 00
E-mail: secretariat@vki.ac.be, TVA BE 0407 185 709
Website: http://www.vki.ac.be

INTRODUCTION

The purpose of the course is to provide the state-of-the-art information on atmospheric boundary layer flows for air pollution modelling. Lectures will include fundamentals of boundary layer phenomena and recent advances relevant to the development of the multi-scale pollution transport models from local to regional and global scales. Field observations, wind tunnel testing, and the potential of CFD for urban dispersion modelling will be adressed as well.

The Lecture Series directors are Prof. J.P.A.J. van Beeck and Prof. J.-M. Buchlin from the von Karman Institute, and Prof. A. Petrosyan from the Russian Academy of Sciences.

TIMETABLE

MONDAY MAY 19, 2008

09:15 **Welcome address**
M. Carbonaro, von Karman Institute for Fluid Dynamics, Belgium

09:30 **Stably and neutrally stratified atmospheric boundary layers**
Prof. S.S. Zilitinkevich, University of Helsinki, Finland

11:00 **Convective atmospheric boundary layers**
Prof. S.S. Zilitinkevich

14:00 **Convective atmospheric boundary layers (Continued)**
Prof. S.S. Zilitinkevich

15:45 **Aerosols transportation in atmospheric boundary layers**
Prof. A. Petrosyan, Russian Academy of Sciences, Russia

17:00 **Reception**

TUESDAY MAY 20, 2008

09:00 **Aerosols transportation in atmospheric boundary layers (Continued)**
Prof. A. Petrosyan

11:00 **Stochastic models of dispersion**
Prof. B. Sawford, Monash University, Australia

14:00 **Stochastic models of dispersion (Continued)**
Prof. B. Sawford

15:45 **Stochastic models of dispersion (Continued)**
Prof. B. Sawford

WEDNESDAY MAY 21, 2008

09:00 **Mesoscale dispersion modeling**
Prof. R. Bornstein, San José State University, USA

11:00 **Mesoscale dispersion modeling (Continued)**
Prof. R. Bornstein

14:00 **Mesoscale dispersion modeling (Continued)**
Prof. R. Bornstein

15:45 **Modelling atmospheric boundary layers in a wind tunnel**
Prof. P.J.H. Builtjes, TNO, The Netherlands

THURSDAY MAY 22, 2008

09:00 **Examples of studies performed in an atmospheric boundary layer wind tunnel**
Prof. P.J.H. Builtjes

11:00 **Measurements in urban environments: A careful analysis of data from a street canyon monitoring station**
Prof. M. Schatzmann, University of Hamburg, Germany

14:00 **Properties of field and wind tunnel boundary layers within and above the urban canopy**
Prof. M. Schatzmann

15:45 **Dispersion experiments in an urban quarter: Comparison of corresponding field and wind tunnel results**
Prof. M. Schatzmann

FRIDAY MAY 23, 2008

09:00 **Urban aerodynamics and contaminant transport**
Prof. J.P. Boris, US Naval Research Laboratory, USA

11:00 **Variability and uncertainty in urban contaminant transport**
Prof. J.P. Boris

14:00 **Emergency Assessment for Urban Contaminant Transport**
Prof. J.P. Boris

15:45 **VKI bus departure**

PRACTICAL INFORMATION

Lunch will be taken from 12h30 to 14h00. Coffee breaks are scheduled each morning and afternoon.

Please pass this announcement to someone who may be interested if you are unable to attend the Lecture Series yourself

Programme

LECTURE SERIES 2007-2008

VKI LS

- ☐ BASICS OF AERO-ACOUSTICS AND THERMO-ACOUSTICS (3-7 December 2007)
- ☐ INTRODUCTION TO CFD (28 January-1 February 2008)
- ☐ POST-PROCESSING OF NUMERICAL & EXPERIMENTAL DATA (11-15 February 2008)
- ☐ EXPERIMENTAL DETERMINATION OF DYNAMIC STABILITY PARAMETERS (18-22 February 2008)
- ☐ AEROENGINE DESIGN: FROM STATE OF THE ART TURBOFANS TOWARDS INNOVATIVE ARCHITECTURES (3-7 March 2008)
- ☐ LARGE EDDY SIMULATION AND RELATED TECHNIQUES. THEORY AND APPLICATIONS (10-14 March 2008)
- ☐ 35TH CFD / ADIGMA COURSE ON VERY HIGH ORDER DISCRETIZATION METHODS (14-18 April 2008)
- ☐ STRUCTURAL DESIGN OF AIRCRAFT ENGINES - KEY OBJECTIVES AND TECHNIQUES (13-16 May 2008)
- ☑ ATMOSPHERIC BOUNDARY LAYER FLOWS IN AIR POLLUTION MODELLING (19-23 May 2008)
- ☐ OPTIMIZATION AND MULTI-DISCIPLINARY DESIGN (2-6 June 2008)
- ☐ ADVANCES IN LAMINAR-TURBULENT TRANSITION MODELLING (RTO-AVT-VKI) (9-3 June 2008)
- ☐ NON-EQUILIBRIUM GAS DYNAMICS, FROM PHYSICAL MODELS TO HYPERSONIC FLIGHTS (RTO-AVT-VKI) (8-12 September 2008)

OTHER CONFERENCES:

- ☐ XIX BIANNUAL SYMPOSIUM ON MEASURING TECHNIQUES IN TURBOMACHINERY (7-8 April 2008)

COURSE FEE

The fee for the lecture series is 1180 euro, applicable to citizens of NATO countries contributing to the financing of the VKI (Belgium, Czech Republic, France, Germany, Hungary, Iceland, Italy, Luxemburg, Norway, Portugal, Spain and Turkey). For citizens of other NATO countries and of NATO partner countries, the fee is of 1545 euro. For non-NATO citizens, the fee is of 1665 euro. The prices are VAT included (VAT of 21%). The fee includes printed notes, transport between VKI and to the recommended hotels, lunches, beverages, and administrative costs.

FELLOWSHIPS

To encourage greater participation in our Lecture Series programme by university members, the Institute has established a limited number of VKI Lecture Series fellowships for citizens of NATO countries contributing to the financing of the VKI, as well as for citizens of other NATO countries coming from a university in a VKI financing country. The recipient of a fellowship is entitled to attend the VKI Lecture Series at a reduced fee, which will be of 595 € VAT included for assistants not having a Ph.D. degree and for Ph.D. candidates, or 295 € VAT included for undergraduate students. The request to be considered for an award must accompany the application to attend the Lecture Series, and the applicant must provide a recommendation letter from his or her professor; if not done so, the request will not be taken into consideration. All possible alternative sources of funding should be investigated before aid is requested under this scheme, so that those most in need will benefit.

METHODS OF PAYMENT

Payment 2 weeks prior to the beginning of the course (name and course title clearly indicated) by bank transfer to our account Nr 210-0315330-35 at Fortis Bank, avenue de la Forêt de Soignes 322, 1640 Rhode-Saint-Genèse, Belgium, IBAN BE57 2100 3153 3035 (strongly recommended). SWIFT BIC GEBA BE BB

Late registration can be paid cash in EURO, or by VISA or Eurocard at the beginning of the course.

PROCEEDINGS

Lectures will be given in English and printed notes will be distributed during registration. Proceedings of other non-RTO lecture series may be purchased at VKI (by e-mail: vanhaelen@vki.ac.be or by fax : 32 2 359 96 00). Information can be found on http://www.vki.ac.be.

HOW TO REGISTER

It is highly recommended to send the registration/hotel reservation form at the latest 15 days before the beginning of the course. A letter of acceptance and additional information will be sent on receipt of the application form.

ACCOMMODATION & TRANSPORT

Participants are advised to make their reservations as early as possible. VKI secretariat (secretariat@vki.ac.be) can book rooms upon request in the recommended hotels listed below. Daily rates include all charges and continental breakfast. These prices are indicative and could be subject to changes.

Hôtel des Colonies http://www.hotel-des-colonies.com	Single: 110 € / Double: 130 €
Hôtel Vendôme http://www.hotel-vendome.be	Single: 100 € / Double: 130 €
Thon Hotel Brussels City Centre http://www.thonhotels.be/	Single: 135 € / Double: 165 €
Hôtel Le Dôme http://www.hotel-le-dome.be	Single: 120 € / Double: 140 €
Hôtel Orts http://www.hotelorts.com	Single: 200 € / Double: 250 €
Progress Hôtel http://www.progresshotel.be	Single: 200 € / Double: 220 €

However, participants could occasionally find special offers on hotel websites.

A youth hostel, the Sleepwell is within walking distance of the recommended hotels. We invite you to make your own reservation through their website: http://www.sleepwell.be.

The hotels situated in Brussels are all within walking distance from the Gare du Nord and the Place Rogier. A train service links the airport with the Gare du Nord (15' journey). Complete your journey to the hotel/youth hostel on foot or by taxi. Each morning and evening, bus transport will be provided between the Place Rogier and the von Karman Institute, located in Rhode-Saint-Genèse, a suburb south of Brussels.

The following hotel, which is about 1.5 km from the Institute, is also recommended, particularly for those who travel by private car. The hotel is about 12km from the center of Brussels and a high standard of comfort is assured.

Auberge de Waterloo****
e-mail: aubergedewaterloo@skynet.be
Fax : +32 (0)2 358 38 06 - Tel: +32 (0)2 358 35 80
Chaussée de Waterloo 212 -
1640 Rhode-Saint-Genèse

For more information about
the localization of the Institute
and the hotels, please visit
our website on http://www.vki.ac.be.

APPLICATION FOR ADMISSION TO VKI LECTURE SERIES

Lecture Series Title: .....

☐ Mr ☐ Mrs
Family name: ..... Firstname: .....
Name & full address of organisation, institution or university: .....
Phone nr: ..... Fax nr: .....
Position or title: ..... E-mail: .....
☐ Asking a reduced fee and joining a recommendation letter as: ☐ undergraduate student ☐ Ph.D. candidate or University assistant
Company / University VAT number: ..... Nationality: .....
VAT of the von Karman Institute: BE 0407 185 709

HOTEL RESERVATION *(if applicable)*

I require accommodation at Hotel ..... for ..... person(s)
Single: ..... Double: ..... Date of arrival: .....
I shall require transport to and from the Institute ☐☐ Date of departure: .....
I do not require transport to and from the Institute ☐☐
Please indicate any special needs (e.g. vegetarian, ...):
.....
.....
Date: ..... Signature: .....

Please mail under-cover to VKI