

Logistics/Scientific Secretariat

Chinese contact (CAE)

Mrs. MA Jieping, e-mail: majieping365@163.com

European contact (VKI)

Mrs. Dominique Landuyt, e-mail: secretariat@vki.ac.be
Phone: +32 2 359 96 04

GRAIN secretariat (CIMNE)

Dr. Jordi Pons, e-mail: jpons@cimne.upc.edu

The logistic organisation of the Course is the responsibility of the von Karman Institute having a large experience in organising qualified tutorial lecture series.

A moderate fee will be asked to participants for covering the expenses of the course material (notes), bus transportation, lunches and coffee breaks.

Place

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

www.vki.ac.be/lectureseries/grain2011



VKI-GRAIN Lecture Series

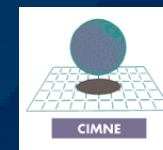
Advanced Methods and Tools for Reducing Environmental Impacts in Aeronautics Design for Aircraft and Aero-engines

4 – 6 July 2011

von Karman Institute for Fluid Dynamics
Rhode-St-Genèse, Belgium (near Brussels)



VON KARMAN
INSTITUTE
FOR FLUID
DYNAMICS



Scientific/Technical Committee

- NOX emission reduction:

I. Poll (Cranfield University, UK),
XU Huasheng (GTE/CAE, China)

- CO2 emission reduction:

D. Quagliarella (CIRA, Italy),
DUAN Zhuoyi (FAI/CAE, China)

- Noise emission reduction:

Ch. Schram (VKI, Belgium),
SUN Xiasheng (ASRI/CAE, China)

-Environmentally friendly materials and structures:

D. Amentia (LEITAT, Spain),
YI Xiaosu (BIAM/CAE, China)

- Advanced High Performance Computing:

T. Nguyen (INRIA, France), AI
Wen (CAE, China)

EC Scientific Officer is

Dr. D. Knoerzer (DG Research &
Innovation - Aeronautics) and

CAE project Manager is

Dr. LUO Shilu (Chinese
Aeronautical Establishment
(CAE).

The lecture series is co-organized by the Von Karman Institute (VKI), the Chinese Aeronautical Establishment (CAE) and the International Centre for Numerical Methods in Engineering (CIMNE), in association with the EU-China co-funded Support Action GRAIN (Greener Aeronautics International Networking) of the 7th Research Framework Programme.

Among critical environmental problems, the continuous increase of global air transport generates an increasing use of hydrocarbon fuel with growing emission of CO² and NO_x. It is well known that commercial aircraft operations cause an impact to the atmosphere by emissions of greenhouse gases and by the formation of contrails.

In 2000 the "Vision 2020 for European Aeronautics" has set the goals for greener aeronautics performances: 80% reduction in NO_x emissions, 50% reduction in CO² emissions per passenger / kilometer, and a 50% reduction of perceived noise.

In its Strategic Research Agenda (SRA) the Advisory Council for European Aeronautics research (ACARE) identified key technologies needed for achieving the Vision 2020 goals. Greening technologies will play a more and more important role to meet future requirements on emissions, fuel consumption noise reduction and environmentally friendly materials and structures.

The main objective of this VKI-GRAIN Course is to deliver in depth lectures on the state of the art technologies including advanced methods and tools for modeling, large scale simulation, experimental validation, advanced materials applications and structural design for mastering the challenges in critical environmental areas. The course will involve scientific and technological experts from Europe and China in the field of aircraft and aero-engine design.

The VKI-GRAIN Course will organize also case studies in aeronautics/aero-engines for a better understanding of emission reduction effects of aircraft/ aero-engine design on the climate, noise and waste impact.

The lectures devoted to NO_x Emission Reduction, CO² Reduction, Noise Reduction and Advanced Large-scale Simulation Techniques (HPC) will be distributed over the 3 days of the course. The lectures on Environmentally Friendly Materials and Structures will be presented in parallel sessions.

The VKI GRAIN course aims at a high educational value and extensive lecture notes will be provided, apart from copies of the slides. The course is targeted to young and experienced engineers involved in the development and design of new technologies in the aeronautical industry, and to PhD candidates and researchers from universities and government laboratories.

The full detail of the program will be available during the month of april.

Lecture Series Directors:

H. Deconinck (local coordinator, VKI, Belgium), J. Periaux (CIMNE, Spain), HUA Jun (CAE, China), YI Xiaosu (BIAM/CAE, China), G. Bugada (CIMNE, Spain), S. Oller, (UPC, Spain).