



A The EU 6th Framework Programme
Specific Support Action
AEROCHINA Europe-China Open Workshop on

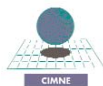
Modeling, Simulation, Experimentation and Design in Aerospace Engineering: Case Studies and Challenges

April 25-27, 2007, CIMNE, Barcelona, Spain



Organization:

- CIMNE / UPC, Barcelona, Spain in association with EU, MOST and AVIC1
- ACTRI / Xi'an, China



An Aeronautics RTD event with the China-EU
Science & Technology Year 2007 (CESTY 2007)

Agenda of AEROCHINA China-Europe Open Workshop and M18 review meeting (April 25-27, 2007)



Location: CIMNE/UPC: Campus Norte UPC; Módulo C1, C/ Gran Capitán s/n, Barcelona

Seminar Format:

- 30 min. European plenary invited lectures;
- 20 min. parallel sessions on case studies delivered by Chinese and European AEROCHINA partners

Wednesday, April 25, 2007

- 09:00-09:30** Registration
- 09:30-10:00** WELCOME ADDRESS (Chairperson: **G. Bugeda**, CIMNE)
D. Knoerzer, EC DG Research, **SUN Jian**, AVIC1, **E. Oñate**, CIMNE, **A.Huerta**, UPC
Introduction into the Open Workshop, **J. Periaux**, CIMNE, and **BAI Wen**, ACTRI/AVIC1
- 10:00-11:00** **PLENARY SESSION** (Chairperson: **G. Bugeda**, CIMNE)
Design Optimisation
Aerodynamic Design Optimisation for Blended Wing Body Aircraft, **Ning Qin**, University of Sheffield, UK
Split of Territories in Concurrent Optimization, **Jean Antoine Desideri**, INRIA, France
- 11:00-11:30** Coffee break
- 11:30-12:30** Concurrent sessions: AEROCHINA partners (M1A, M1B)

Session 10

Simulation I, Chairperson : ?
Seminar Room, Building C1

■ Stability Study of Vortex Pairs over Slender Conical Bodies, **LI Huaxing**, NPU (P15)

■ Study of wind tunnel model deformations produced by twisting supports, **R. Flores**, CIMNE, Spain (P1)

■ Simulation and Analysis of Synthetic Jet Characteristic and Performance by CFD, **Chen Bao**, CARIA (P16)

Session 20

Control I, Chairperson: ?
Conference Room , Building C2

■ Control for Cavity Flow, **LI Jun**, SARI (P17)

■ Application of optimal control for multi-disciplinary aerospace problems, **J. Saniger**, EADS-CRC, France (P 3)

■ Oscillating Free-stream Effects on Dynamic Characteristics of Wind Tunnel Models, **MING Xiao**, NUAU (P21)



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12:30-14:00 Lunch

14:00-15:00 Concurrent sessions: AEROCHINA partners (M2A, M2B)

Session 11

Simulation II Chairperson: ?
Seminar Room, Building C1

■ Numerical Simulation for Supersonic Flows over Double Ellipsoid, **LEE Chun-Hian**, BUAA (P19)

■ Experiences in Computational Combustion, **ZHENG Yao**, Zhejiang University, (P22)

■ A New Method of Wing Flapping Based on Bionics of Fruit Fly Hovering at Low Reynolds Number, **MA Handong**, CAAA (P24)

Session 20

Optimization I Chairperson: ?
Conference Room, Building C2

■ Shape Optimization Problems in Aerodynamics using Hierarchical Methods, **T. Nguyen**, INRIA, France(P7)

■ Robust design: a new technology for design with uncertainties, **Tang Zhili**, NUAU (P21)

■ Adaptive Landing Gears for Improved Impact Absorption-ADLAND, **Jan Holnicki**, IFTR (P11)

15:00-16:00 Concurrent sessions with Multiphysics Working Groups (WGs)

WG1:	Aero-elasticity	(AIRBUS, NPU)	(Meeting Room A)
WG2:	Aero-combustion	(IUSTI, ZJU)	(Meeting Room A)
WG3:	Aero-thermal	(EADS-CRC, CAAA)	(Meeting Room B)
WG4:	Aero-vibro-acoustics	(ERCOFTAC, NUAU)	(Meeting Room B)
WG5:	Flow-control	(DASSAULT, NUAU)	(Meeting Room C)
WG6:	Flight-mechanics-coupling	(DLR, EADS-M, FAI)	(Meeting Room C)

16:00-16:30 Coffee break

16:30-17:00 Reporting of Working Groups (WG Leaders)

17:00-18:30 M18 rehearsal meeting (restricted to AEROCHINA partners)

19:00 Cocktailreceptionat CIMNE

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Thursday, April 26, 2007

- 09:00-10:00** Opening Ceremony (Chairperson: **Dietrich Knörzer, EC**)
- **A. Siegler, Transport Director; EC**
 - **MOST (X)**
 - **AVIC1(X)**
 - **L. Tores, Vice-Rector of International Relations; UPC**
 - **E. Onate, Director CIMNE**

10:00-11:00 **PLENARY SESSION** (Chairperson: **Dietrich Knörzer, EC**)

Experimentation and multi-physics optimisation

Some critical issues in testing for aircraft technologies and the capabilities of the German-Dutch Windtunnel DNW, **Georg Eitelberg, DNW, Germany.**

Some key technical challenges in Simulation to develop the Virtual Bird concept, **Eric Duceau, EADS Innovation Works and Pascal Gendre, Airbus, France**

11:00-11:30 Coffee break

11:30-12:30 Concurrent sessions: AEROCHINA partners (Session , M3B)

Session 12

Experiment & Validation Chairperson: ?
Seminar Room, Building C1

- FP6 REMFI project/experimental and validation exercise, **A. Abbas, AIRBUS, Spain (P5)**
- Numerics/experiments comparison for shock wave impacts a deforming panel, **D. Zeitoun, IUSTI-Univ. Provence (P6)**
- Case studies for verification of FW-H approach to aeronautics, **C. Hirsch, ERCOFTAC (P9)**

Session 22

Optimization II Chairperson: ?
Conference Room , Building C2

- Optimisation in the aeronautics industry using evolutionary algorithms, **Werner Haase, EADS-M, Germany (P4)**
- Aircraft Winglet Optimization Design and Validation, **CHEN Yingchun, FAI (P18)**
- Tools for Aerodynamic Shape Optimization of the DLR-F6 Aircraft Configuration, **Niko Schade, DLR, Germany (P8)**



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12:30-14:00 Lunch

14:00-15:00 Concurrent sessions: AEROCHINA partners (M2A, M2B)

Session 13

New tools Chairperson: ?
Seminar Room, Building C1

■ Preliminary results of hybrid mesh-free methods for flow applications, **H.Q. Chen**, NUAU (P21)

■ Possibilities of the meshless finite element method for aerodynamic analysis, **R. Ortega**, INGENIA, Spain (P 12)

■ Advances in Mesh Generation and Deformation: Theory and Applications in Solid Mechanics, **YUAN Mingwu**, Peking University(P23)

15:00-15:30 Coffee break

15:30-17:00 **EU-China bilateral effort for R&T in aeronautics**
(Chairperson: **E. Oñate**, CIMNE)

21:00 Banquet hosted by CIMNE at MONCHO's restaurant (Maremagnum)

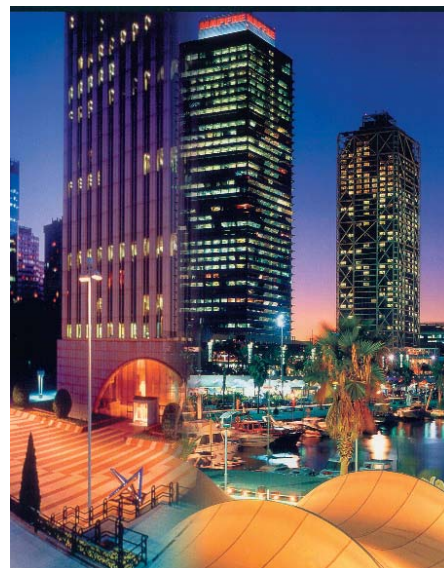
Session 23

Control II Chairperson: ?
Conference Room , Building C2

■ Control Noise of Supersonic Impinging Jet by Shield Method and Microjets, **YAO Zhaohui**, Tsinghua University (P20)

■ Airfoil leading edge boundary layer separation control by synthetic jet slot, **J-C Courty**, Dassault Aviation, France (P2)

■ Numerical Parametric Study of Active Control for Separation Flow over the CFDVAL2004 Hump Model, **LI Li**, ACTRI (P13)



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Friday, April 27, 2007

09:00-10:00 Concurrent sessions: AEROCHINA partners (M5A, M5B)

Session 14

Chairperson: ?
Seminar Room , Building C1

Session 24

Optimization & Modeling
Chairperson: ?
Conference Room , Building C2

■ Static Aeroelastic Optimization Design of Joined Wing, **Zheng Chengxing**, CADI (P14)

■ Development of Ti alloys and Net shape manufacturing of aerospace components, **Xinghua WU**, Univ. Birmingham, UK (P10)

■ Advanced Inlet Design, **Zheng Chengxing**, CADI (P14)

10:00-10:30 Coffee break

10:30-11:30 **PLENARY SESSION** (Chairperson: ?)

"Multidisciplinary Integration in the Context of Aircraft Design",
Vittorio Selmin, ALENIA.

"Fluid Mechanics and Optics: the effect of turbulence in the observation of the Universe ", **Ramon Codina**, UPC.

11:30 Concluding remarks

11:45-13:15 M18 AEROCHINA meeting (restricted to AEROCHINA partners)



An Aeronautics RTD event with the China-EU



AEROCHINA M18 Meeting (restricted to AEROCHINA partners)

Wednesday, April 25, 2007

- M12** Meeting (*Co-Chairmen: Prof. Jacques Periaux and Gabriel Bugeda, CIMNE*)
Coffee and tea available during the meeting
- 17:00-17:30** Overview of the AEROCHINA project,
G. Bugeda (CIMNE), and BAI Wen (ACTRI)
- 17:30-18:30** Activity Reports of the Workpackages:
- Specification of prospective strategy and work plans (CIMNE, ACTRI)
- Web based AEROCHINA Communication System (CIMNE, ACTRI, INRIA)
- State of the art review and collection of data (DLR, BUAA)
- Identification of future joint multidisciplinary RTD (IUSTI, NUAA)
- Dissemination activities (CIMNE, ACTRI)
- Project Management (CIMNE, ACTRI)
- 18:30** End of rehearsal M18 meeting

Friday, April 27, 2007

- 11:45-12:05** Administrative and financial aspects (cost statements) (CIMNE)
- 12:05-12:35** Lessons learned from the Workshop
- 12:35-12:55** Summary of main achievements of AEROCHINA project
(CIMNE, ACTRI)
- 12:55-13:15** Future actions (Exploitation, FP7)
- 13:15-13:25** Summary Statement and EC remarks
- 13:25-13:35** Any other business
- 13:35** Meeting adjourned



Partners of the Project

From Europe

CIMNE/UPC
DASSAULT
EADS CRC
EADS-M/DE
AIRBUS
IUSTI-UNIV. PROV
INRIA
DLR
ERCOFTAC
UNIV. BIRMINGHAM
IFTR
INGENIA

From China

ACTRI/AVIC1
CADI/AVIC1
NPU
CARIA/AVIC1
SARI/AVIC1
FAI/AVIC1
BUAA
TSINGHUA UNIV.
NUAA
ZHEJIANG UNIV.
PEKING UNIV.
CAAA

Local Organizing Committee

G. Bugada, CIMNE, Spain
A. Coll, CIMNE
E. Onate, CIMNE, Spain
M. Pasenau, CIMNE
J. Periaux, CIMNE, Spain
A. Valls, INGENIA



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