

Integrated Multiphysics Simulation & Design Optimization

Open Industrial Day Introducing a
Database Workshop for Multiphysics
Software Validation

Agora, Jyväskylä, Finland
March 16, 2009

Technical Content of the Open Industrial Day

The objectives of the Open Industrial Day will be to launch a Database Workshop in presenting test cases simulation and optimization for computation and present the structure of a Finnish Database on which test cases problems and computational data results will be installed for comparisons. And to discuss via presentations and a round table the impact in Industry and Society of innovative Multiphysics software on Digital products with internationally recognized senior experts of Academy, Industry and Governmental institutions.

Scientific & Technical Organizing Committee:

J. Alonso, Stanford, USA, W. Fitzgibbon, Univ. of Houston, USA, J. Järvinen, CSC, Finland, M. Korkiakoski, Tekes, Finland, P. Neittaanmäki, JYU, Finland, J. Periaux, JYU, Finland, J. Rahola, Nokia, Finland and O. Ventä, VTT, Finland

Organized by SCOMA Center, University of Jyväskylä,
in association with CSC, VTT and Univ. of Houston,
College of Technology

Sponsored by TEKES FIDIPRO PROGRAM

www.mit.jyu.fi/scoma/MDO2009



Invited Speakers and Timetable

Time Sunday March 15

19:00 - Dinner at Rantasipi Laajavuori

Time Monday March 16

8:30 Bus from Laajavuori to Agora

Session 1: 9:00–9:20

Chairman T. Tiihonen, Vice Rector JYU

9:00 Opening Ceremony & Welcome Address

A. Sallinen, Rector JYU
M. Korkiakoski, Tekes

Session 2: 9:20–10:20

Chairman J. Rahola, Nokia

9:20 Digital Product Process -
Tekes-programme 2008-2012
J. Kanerva, Variantum, Finland

9:40 "Multidisciplinary optimization of mobile
phones"
J. Jekkonen, Nokia, Finland

10:00 "Multiphysics simulation at Univ. of Houston"
W. Fitzgibbon, College of Technology, Univ.
Houston, USA

10:20 Coffee break

Session 3: 10:40–12:20

Chairman J. Alonso, Stanford

10:40 "Multi-disciplinary challenges of Modelling
and Simulation in Finnish Industry"
O. Ventä, VTT, Finland

11:00 "FreeFem++ for Multidisciplinary Design
Optimization (MDO)"
F. Hecht, LJLL-UPMC, France

11:20 "Multidisciplinary Design Optimization by
modeFRONTIER. An overview of industrial
applications."
L. Onesti, ESTECO Trieste, Italy

11:40 "Multiphysics software for MDO at Numerola:
Present and future"
P. Tarvainen, Numerola, Finland

12:00 "Elmer finite element software for
multiphysical optimization problems"
P. Råback, CSC, Finland

12:20 Lunch

Session 4: 13:40–15:10

Moderators W. Fitzgibbon, Univ. of
Houston and J. Periaux, JYU

13:40 Round Table Discussion:
"Impact on Education, Training and Industry
of Innovative Multiphysics software for the
Design of new Digital Products"

Panelists:

J. Alonso, A&A Depart. Stanford (University)
W. Fitzgibbon, College of Tech., Univ. Houston
(University)
J. Kanerva, Variantum, Espoo (SME)
L. Onesti, ESTECO, Trieste (SME)

J. Rahola, Nokia, Helsinki (Industry)
T. Rossi, MIT JYU, Jyväskylä (University)
O. Ventä, VTT, Espoo (Governmental Institution)

15:10 Coffee Break

Session 5: 15:30–16:45

Chairman J. Periaux, JYU

15:30 Launching the Database Workshop for the Vali-
dation of Multiphysics Optimization software

Part 1 Database structure: presentation,
registration and regulations
J. Forsman and T. Varis

Part 2 Test case definitions

"MDO of Mobile Phone" (industry)
J. Jekkonen, Nokia, Finland

"Patria AST" (industry)
P. Hepola, Patria, Finland

"Shock control bump optimisation on a
transonic laminar flow aerofoil" (academy)
Ning Qin, Univ. Sheffield, UK

"Optimization of beam profile in fluid-
structure interaction" (academy)
P. Råback, CSC, Finland

"Numerical benchmarking of fluid-structure
interaction between an elastic object and
laminar incompressible flow" (academy)
S. Turek, Univ. Dortmund, Germany

16:45 Discussion and recommendation

17:00 OID meeting closing remarks

P. Neittaanmäki, JYU

