General Information

The Database Workshop with test cases from academy and industry will be open to delegates worldwide. Special efforts will be made to ensure a balanced representation from major areas of Finnish Industries and Bio Engineering & Medical Applications, Academia and Governmental Laboratories.

Contributions to simulation/optimization test cases computations will not be required to attend the launch of the Database Workshop.

Everybody is welcome!

The Database Workshop on Computational Multiphysics Simulation and Design Optimization is organized jointly by University of Jyväskylä, VTT, CSC, Stanford / MIT Consortium for Multidisciplinary System Design, University of Houston, College of Technology.

Secretariat

Contact for Europe
Mrs. Anu Penttilä, University of Jyväskylä, Finland

Database Workshop: scoma-dbw@jyu.fi

Contact for North America
Ms. Sharon Lahey, University of Houston, USA

Database Workshop: slahey@uh.edu

Logistic and Scientific Secretariat

- M.-L. Rantalainen, Univ. Jyväskylä, Finland
- T. Tuovinen, Univ. Jyväskylä, Finland
- K. Valpe, Univ. Jyväskylä, Finland
- Wang Hong, Univ. Jyväskylä, Finland

Important Dates

2nd release of test cases	December 15, 2009
Last registration date	February 25, 2010
Data results installed in Database	February 25, 2010

A detailed information will be available from the event's website: **http://www.mit.jyu.fi/scoma/DBW2010**

Registration Fees

Please register for the Database Workshop at the event's website: **http://www.mit.jyu.fi/scoma/DBW2010**.

Registration fee is 200 €, and students -50 %.

Accommodation

For hotel accommodation please check the website: **http://www.mit.jyu.fi/scoma/DBW2010**

Integrated Multiphysics Simulation & Design Optimization

An Open Database Workshop for Multiphysics Software Validation

Presentation of the Industrial & Academic Test Case Results

Agora, Jyväskylä, March 10–12, 2010

Organized by **SCOMA Center, University of Jyväskylä**, in association with **CSC, VTT, Stanford / MIT Consortium for Multidisciplinary System Design and University of Houston, College of Technology**

Sponsored by **Tekes FiDiPro Program**

Website: http://www.mit.jyu.fi/scoma/DBW2010

The Database Workshop

The need of advanced optimization software for single/multiphysics design encourages an attempt to a confrontation of computational optimization results stored in a Database on carefully selected problems of industry and society.

Opening such a confrontation to all world scientists will allow a more general evaluation of uncertainties in Single/Multi Discipline MDO and will provide a reference to define useful validation guidelines for future design in industry and society.

Objectives of the Database Workshop

- Propose to the scientific/industrial community involved in Design and Control problems, test case analysis and optimization problems for multiphysics software validation.
- Gather a forum of international experts for evaluating by comparison of computerized data the efficiency and robustness of existing and new multidiscipline optimization software without and with uncertainties on selected test cases installed on a synchronized Finnish and US Database.
- Provide industry and society reference test cases for validation of advanced software used to design their new digital complex products.
- Identify collaborative areas requiring additional R&D in Multi-criteria / Multidisciplinary Design Optimization.

The announcement introducing Database Workshop with the definition of optimization test cases is available on the website:

http://jucri.jyu.fi

Test Cases

Academic test cases are marked with TA and industrial test cases with TI.

TA1 A numerical set-up for benchmarking and optimization of fluid-structure interaction

Chairmen: Stefan Turek, ture@mathematik.uni-dortmund.de
Mudassar Razzaq, mudassar.razzaq@math.tu-dortmund.de
Organization: TU Dortmund

TA2 Inverse or optimization problems for multiple (ellipse) ellipsoid configurations

Chairman: Jyri Leskinen, jyri.leskinen@mit.jyu.fi
Organization: University of Jyväskylä

TA3 Numerical investigation of two-dimensional flow over Darrieus-type wind turbine

Chairmen: Matti Nurmia, matti.j.nurmia@jyu.fi
Petja Sidoroff, petja.sidoroff@jyu.fi
Organization: University of Jyväskylä

TA4 Optimization of beam profile in fluid-structure interaction

Chairman: Peter Råback, raback@csc.fi
Organization: CSC - IT Center for Science

TA5 Shock control bump optimization on a transonic laminar flow airfoil

Chairman: Ning Qin, n.qin@sheffield.ac.uk
Organization: University of Sheffield

TI1 MDO of Mobile Phone: Antenna, SAR, HAC and Temperature

Chairman: Jari Jekkonen, jekkonen@itis.ethz.ch
Organization: IT'IS Foundation

TI2 Patria AST Test Case 2.1–2.3

Chairman: Petri Hepola, petri.hepola@patria.fi
Organization: Patria Aerostructures Ltd.

Contributing to the Database

The Design Test Case Database is available at http://jucri.jyu.fi. A series of MDO test case descriptions provided by industrial and academic experts can be found on the site mentioned above. The definitions are prepared in such a way that interested parties can test their own tools and methods in solving these test cases.

If you are a researcher or a professional in the field of multidisciplinary optimization and interested in becoming a contributor to the database, please go to the website and follow the instructions. Your application will be processed by the administrators and you will be contacted shortly with further details, including specific details on requested data formats for the computational results as determined by the test case chairmen.