

ERCOFTAC SIG 41
Fluid-Structure Interaction with impact on industrial applications
16-17 October 2014

Course Coordinators:

Dr. Marianna Braza , IMFT, France & Elisabeth Longatte, EDF R&D, France
Venue: EDF R&D, Chatou-Paris, France

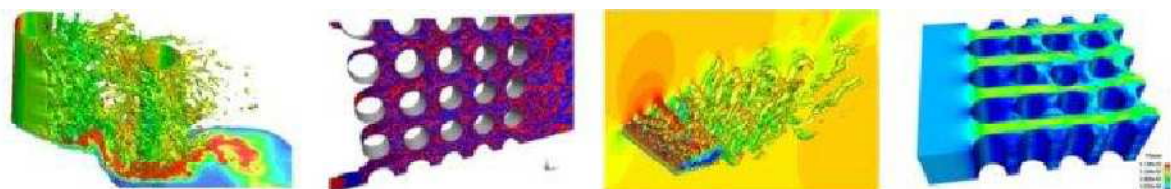
Lecturers :

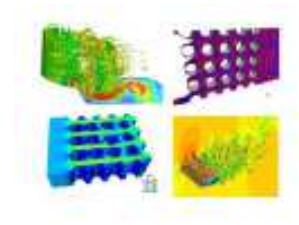
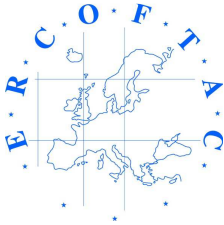
Prof. G. Barakos, University of Liverpool, UK.
Prof. A. Bottaro, University of Genova, Italy
Dr. T. Coupez, CEMES Sophia Antipolis, France
Dr. E. Fares, Exa Co., France
Dr. Y. Hoarau, ICUBE, Strasbourg, France
Prof. K. Hourigan, Monash University, Australia
Dr. A. Revell, Univ. Manchester, U.K.
Prof. M. Schaeffer, University of Darmstadt, Germany
Dr. J. Vos, CFS Engineering, Switzerland
Prof. J. Hunt, CPOM, UCL, UK
Prof. A. Mahbub, Shenzhen Grad Sch., Harbin Inst of Technology, China

Scope:

The scope of this course is to bring together the academic and industrial scientific communities in Fluid Dynamics (FD) and Structural Mechanics (SM) on this topic, in order to address the state-of-the-art methods in theoretical, experimental and numerical approaches. The course contents involve fluid-structure interaction phenomena associated with solid structure rotation, fluid-structure coupling involving instabilities, vibrations, separation. A principal goal is to enable researchers in the FSI community with state-of-the-art methods for analysing the fluid-structure interaction phenomena and to come up with quality achievements and best practice guidelines for efficient and secure design. The domains of applications cover a large spectrum including flow and movement induced vibrations in hydrodynamics and in aerodynamics.

The course will be composed of ten Key Note Lectures. A large audience coming from the above academic and industrial communities is previewed.





Thursday 16 October 2013

9:30	Welcome address from EDF R&D Chatou	M. Boucker
9:35	Welcome address from the ERCOFTAC SPC-SIG 41 Fluid-Structure Interaction	M. Braza
9:40	Real scale dynamic system stability analysis for modelling vibrations in heat exchangers	E. Longatte
10:30	Fluid-Structure Interaction under turbulent flow around cylinders and morphing wings	M. Braza
11:10	<i>Coffee break</i>	
11:30	Three-dimensional transitions and FSI in the wakes of rotating bluff bodies	K. Hourigan
12:10	Flow through anisotropic poroelastic media	A. Bottaro
13:00	<i>Lunch</i>	
14:20	Partitioned Approaches for Simulating Fluid-Structure-Acoustics Interaction	M. Schaefer
15:10	<i>Coffee break</i>	
15:30	Lattice-Boltzmann Flow simulations for industrial FSI applications	E. Fares
16:10	<i>Refreshments</i>	

Friday 17 October 2013

9:00	Fluid Structure Interaction Methods for the Analysis of Rotary	G. Barakos
9:50	Fluid-Structure interaction coupling using Chimera	Y. Hoarau
10:40	<i>Coffee break</i>	
11:00	Fluid Structure Interaction simulations on the F/A-18 fighter for fatigue evaluation	J. Vos
11:50	Highly Deformable Fluid Structure Interactions Using Immersed Boundary Method	A. Revell
12:40	<i>Lunch</i>	
14:00	Implicit Boundary and adaptive meshing for fluid structure interaction	T. Coupez
14:50	Turbulent sheared interfaces, wall effects and separated/non-separated wake flows	J. Hunt
15:40	<i>Coffee break</i>	
15:50	Fluid-Structure Interactions between Two Circular Cylinders	M. Alam
16:40	Industrial round-table discussion and Q & A sessions	All
17:00	<i>Closing address and refreshments</i>	

