

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

Course Coordinators:

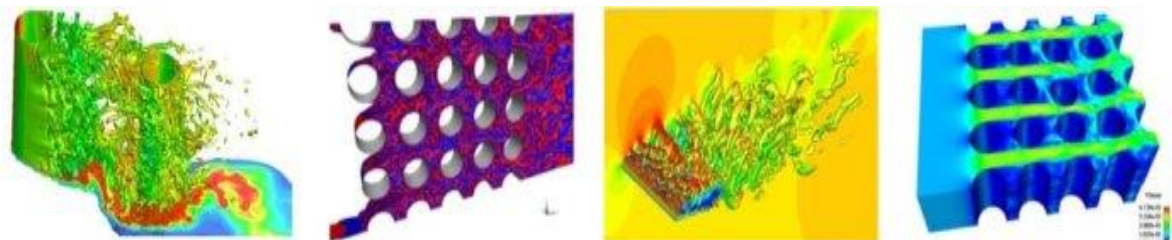
Dr. Marianna Braza , IMFT, France & Elisabeth Longatte, EDF, France
Venue: EDF, Chatou-Paris, France

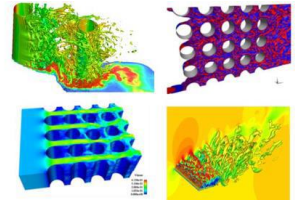
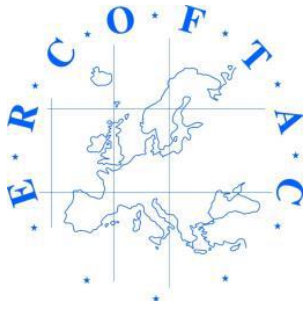
Lecturers:

Prof. G. Barakos, University of Liverpool, UK.
Prof. A. Bottaro, University of Genova, Italy
Prof. F. Chinesta, Ecole Centrale Nantes, France
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:

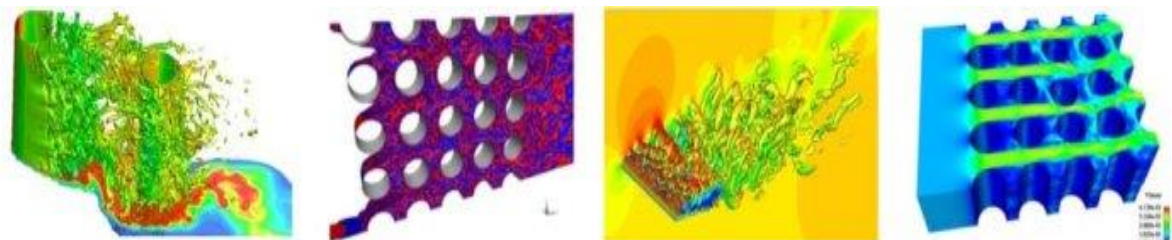
The scope of this course is to bring together the academic and industrial scientific communities in Fluid Dynamics (FD) and Structural Mechanics (SM) on this topic, in order to address the state-of-the-art methods in theoretical, experimental and numerical approaches. The course contents involve fluid-structure 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.

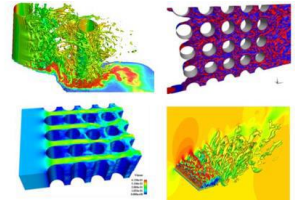
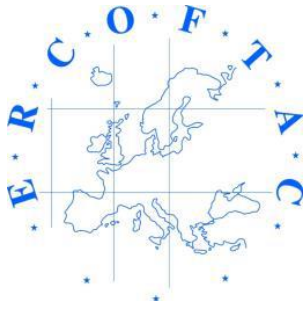




Thursday 16 October 2013

9:00	Welcome address and Fluid-Structure interaction coupling in EDF – Chatou	E. Longatte
9:45	Welcome address and FSI related to the Smartwing Morphing Centre	M. Braza
10:30	Three-dimensional transitions and FSI in the wakes of rotating bluff bodies	K. Hourigan
11:20	Coffee break	
11:50	Flow through anisotropic poroelastic media	A. Bottaro
12:40	Lunch	
14:00	Model Order Reduction in Fluid Structure Interaction	F. Chinesta
14:50	Partitioned Approaches for Simulating Fluid-Structure-Acoustics Interaction	M. Schaeffer
15:40	Coffee break	
16:10	Lattice-Boltzmann Flow simulations for industrial FSI applications	E. Fares





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	Coffee break	
11:10	Fluid Structure Interaction simulations on the F/A-18 fighter for fatigue evaluation	J. Vos
12:00	Highly Deformable Fluid Structure Interactions Using Immersed Boundary Method	A. Revell
12:50	Lunch	
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	Fluid-Structure Interactions between Two Circular Cylinders	M. Alam
16:30	Industrial round-table discussion and Q&A sessions	All
17:00	Closing address and refreshments	

