Workshop MID-FREQUENCY
Progress and ongoing researches

Chairmen :
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Thursday, October 27th, 2011
Ecole Centrale de Lyon
Amphitheater # 3

Mid-Frequency Workshop

"CAE Methodologies for Mid-Frequency Analysis in Vibration and Acoustics"

Medium and high frequency range is a fundamental topic of research in the context of modern structural dynamics. In fact, well established and deeply studied numerical methods like finite element or boundary equation based formulations run into important limitations as frequency increases.

There are a range of mathematical and philosophical approaches to mid-frequency issues and a variety of physical interpretations of the behavior. These draw together concepts from various disciplines, including dynamics, acoustics, and techniques from numerical analysis and mathematics.

The workshop main objective is to bring together researchers from the academic and industrial world concerned mid-high frequency dynamics. The emphasis is on numerical and experimental strategies for vibration and noise estimation. The focus will be specifically on advanced numerical strategies to address mid-high frequency issues.

Efficient alternative deterministic methods which aim to stretch the low-frequency application range, energy methods which aim to improve and extend the frequency range of application of high-frequency probabilistic approaches such as SEA to lower frequencies and hybrid approaches that combine deterministic and energy methods are also within the framework of the scientific exchange the workshop.
Some of research applications areas of mid-high frequencies will be also presented.

The Mid-Frequency project

The mid-frequency project is a Marie Curie Initial Training Networks (ITN) Call: FP7-PEOPLE-2007-1-1-ITN. The project is for a 4-year ITN of 12 partners (8 academic and 4 industrial, of which 1 research institute) hosting 13 Early-Stage Researchers (ESRs) and 4 Experienced Researchers (ERs). The project aims to draw together academic research teams and industrial partners from different sectors with common interests in the field of mid-frequency vibration and acoustic prediction and analysis.

Senior expert speakers

Prof. Svante Finnveden
KTH, MWL / Aeronautical and Vehicle Engineering, Sweden.

Prof. Jean-Louis Guyader
INSA de Lyon, Laboratoire de Vibrations et d'Acoustique, France

Prof. Pierre Ladevèze
ENS Cachan, Laboratoire de Mécanique et de Technologie, France

Prof. Robin Langley
University of Cambridge, Department of Engineering, UK

Workshop Preliminary Program

9h30 – 9h45 - Welcome and registration

9h45 – 10h00 - Introduction

10h00 – 12h30 - 4 Senior Lectures

12h00 - 13h30 - Lunch

13h30 – 15h50 - ESR/ER presentations

15h30 - 16h00 - Coffee break

16h00 – 17h40 - ESR/ER presentations

17h40 – 18h00 - Closure

Contact : Dr O. Bareille (Olivier.Bareille@ec-lyon.fr) – FREE of charge / compulsary registration (before October 22nd)