Research activities in Aeroacoustics - Annual Report 2009

Authors: Prof. R. Camussi, Prof. M. Gennaretti, Prof. U. Iemma, Prof. L. Morino, Dr. G. Bernardini, Dr. M. Diez, Dr. A. Di Marco.

Compiled by U. Iemma.

1. Research topics

Airframe noise:
Aeroacoustic characterization of a cylindrical cavity through velocity and wall pressure measurements carried out on a cavity model installed within the test section of the low speed tunnel available at the University Roma Tre.

Propeller noise:
Aerodynamic characterization of a propeller wake interacting with a solid surface. The experimental activity has been conducted in collaboration with INSEAN (the Italian centre for hydrodynamic research).

Cabin noise:
application of optimal control approach based on smarted fuselage aimed at alleviating aircraft tonal cabin noise.

Acoustic cloaking:
development of a boundary integral formulation for the analysis of the Cummer-Shuring acoustic cloaking. Work is in progress for the extension of the method to arbitrarily-shaped moving boundaries.

2. Events

X³-Noise National Workshop on Aeroacoustics. CIRA, Capua 8-9 April 2010

Prof. Camussi was member of the scientific committee.

University Roma Tre contributions to the workshop:
1. R. Camussi, Advanced noise source identification techniques.
3. L. Morino, Power spectral density transfer function: from boundary-pressure to field-pressure.
4. M. Gennaretti, Rotorcraft aeroacoustics at University Roma Tre.
5. U. Iemma, Is Acoustic cloaking feasible for industrial applications ?

3. EC projects

AeroTraNet: Unsteady aerodynamics training network in airframe components for competitive and environmentally friendly civil transport aircraft” 6FP Marie Curie EST

**COSMA** (Community Oriented Solutions to Minimize Aircraft Noise Annoyance), VII Framework Programme Level 1 project, end June 2012.

**OPENAIR** (OPtimisation for low Environmental Noise impact of AIRcraft), VII Framework Programme Level 2 project, end May 2013.

4. Publications

4.1 International Journals


4.2 International Conferences


4.3 National Conferences
