

Announcement

Symposium on Vortex-Structure Interaction

Sixth U.S. National Congress on Computational Mechanics

**Hyatt Regency Dearborn
Dearborn, Michigan, USA**

August 1-4, 2001

<http://www.usnccm.org>

Symposium Organizers: J.S. Marshall and J.R. Grant

A large number of mechanics applications involve unsteady vorticity fields acting in the presence of either fixed or moving solid structures. Common examples include noise production and vibration of rotorcraft and turbomachinery rotors, parachute inflation mechanics, hydromechanics and acoustic sensing of marine cable systems, and dynamics of marine platforms. Vortex-structure interaction leads to unsteady surface pressure on the structure, with consequent structural motion and sound generation. Numerical analysis of vortex flows near a structure are made difficult by unsteady boundary-layer separation effects and the need to resolve thin vortex sheets and tubes external to the boundary layer. Computational methods deal with structural motion and acoustic transmission for such flows experience challenges from the different characteristic time scales and the influence of error propagation between the fluid/structural/acoustic parts of the solution.

The Vortex-Structure Interaction Symposium will provide a forum for communication and interaction between individuals involved in different aspects of the subject, ranging from issues of unsteady fluid dynamics in the vicinity of a structure to issues involving structural mechanics under the action of unsteady fluid forces. It is hoped that interdisciplinary communication of this sort will lead in the future to collaborative approaches to the subject, incorporating both fluid and solid mechanics aspects.

Topics of interest for the Vortex-Structure Interaction Symposium include the following:

- Unsteady vortex dynamics mechanics near fixed or vibrating structures
- Structural response to unsteady vortex-induced fluid forces
- Computational issues and approaches for fluid-structure coupling
- Sound generation by vortex-structure interaction
- Active control approaches utilizing vortex-structure interaction

Anyone interested in contributing to this Symposium is invited to submit an abstract to the symposium contact person, Jeff Marshall (jeffrey-marshall@uiowa.edu). The abstract format should follow the abstract submission information described in the "Abstract Submission" section of the USNCCM web site (<http://www.usnccm.org>).

Symposium Organizers

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