

SEMINARIO DI ANALISI MATEMATICA

Il 22 febbraio 2011 alle ore 17:00

presso l'Aula di Rappresentanza

del Dipartimento di Matematica dell'Università di Milano

EDUARD FEIREISL

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terrà un seminario dal titolo

Stability with respect to domain in the low Mach number limits of compressible viscous fluids

Abstract. We discuss the asymptotic limit of solutions to barotropic Navier-Stokes system, where the Mach number is proportional to a small parameter $\varepsilon \rightarrow 0$ and the fluid is confined to an exterior spatial domain Ω_ε varying with ε . It is shown that the fluid density becomes constant while the velocity converges as $\varepsilon \rightarrow 0$ to a solenoidal vector satisfying the incompressible Navier-Stokes equations on a limit domain. The velocities approach the limit strongly (a.a.) on any compact set, uniformly with respect to a certain class of domains. The proof is based on spectral analysis of the associated wave propagator (Neumann Laplacian) governing the motion of acoustic waves.

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