Expositor:

Christophe Chalons

Applied Mathematics at University Paris Diderot - Paris 7

Título de la Charla:

A large time-step and asymptotic-preserving scheme for the gas dynamics equations with source terms

Fecha y Hora:

Martes 6 de Mayo de 2014, 15:30 Horas.

Lugar:

Sala Seminario, Facultad de Ciencias

Universidad del Bío-Bío.

Resumen

We propose a large time-step and asymptotic-preserving scheme for the gas dynamics equations with external forces and friction terms. By asymptotic-preserving, we mean that the numerical scheme is able to reproduce at the discrete level the parabolic-type asymptotic behaviour satisfied by the continuous equations. By large time-step, we mean that the scheme is stable under a CFL stability condition driven by the (slow) material waves, and not by the (fast) acoustic waves as it is customary in Godunov-type schemes. Numerical evidences are proposed and show a gain of several orders of magnitude in both accuracy and efficiency.

Informaciones: royarzua@ubiobio.cl y dmora@ubiobio.cl