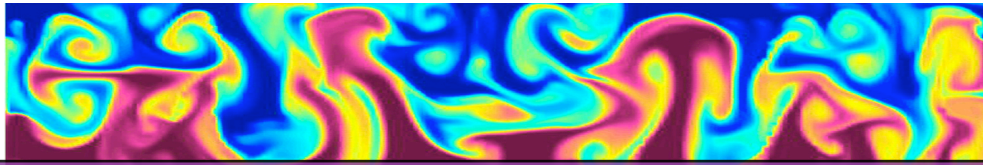


First Latin American SCAT Summer School

Universidad Técnica Federico Santa María, Valparaíso



The simulation of Fluid Turbulence

One of a series of mini-courses taking place 6-12 January 2007

This course will consist of two lectures on fluid turbulence, concentrating on the physics and simulation, and summarizing modern modeling techniques and applications.

Lecture I: Basic Physics and Simulation

Turbulent flows occur in many natural and man-made phenomena, whenever inertial forces overwhelm viscous forces in a fluid. In this presentation, we will review some basic properties of turbulent flows, and summarize the challenges in simulating such flows on a computer. We review Reynolds averaged, direct numerical, and Large Eddy Simulation techniques. For the latter, we summarize some of our own recent wind tunnel studies to test different models.

Lecture II: Dynamic models in Large Eddy Simulation

In this talk we derive and present the basic notions underlying so-called dynamic models of turbulence. The idea is that these models do not require specification of ad-hoc coefficients. Various techniques and applications to environmental fluid mechanical problems will be summarized.

Lecturer:

Prof Charles Meneveau, Head of the Turbulence Research Group
Johns Hopkins University, Maryland USA

This course can be offered either in English or Spanish. The organizers will decide according to the needs of the local participants, and it will be announced soon.

For more information, email info@scat-alfa.eu or visit www.scat-alfa.eu



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