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Joint Colloquium

Multiscale Simulation for Fluid Dynamics – Boundary Layer Corrections

Professor Bjorn Engquist
The University of Texas at Austin

Abstract

The standard no slip boundary condition for Navier-Stokes equations often strongly influences the overall flow and may result in small scale effects, which are hard to computationally resolve. We will consider cases where effective slip boundary conditions can be derived based on local high resolution simulations. In the case of creeping flow at rough boundaries the correct form of effective boundary conditions can be rigorously derived. For Large Eddy Simulation (LES) of turbulent flow local direct numerical simulations are used to computationally determine an appropriate wall law. The computational set up follows that of the heterogeneous multiscale method and the analysis is based on homogenization theory.

Date:	15 February 2019 (Friday)
Venue:	C3, Lady Shaw Building, The Chinese University of Hong Kong, Shatin
Time:	4:30 p.m. – 5:30 p.m.

All are Welcome!