

國立交通大學應用數學系

學術演講公告

(1) 主講人：蔡協澄教授(國立台灣大學機械工程學系)

講題：An strongly-coupled immersed-boundary formulation for rigid-bodies interacting with fluid flow

時間：108 年 10 月 1 日(星期二) 下午 13:20 –14:20

Abstract

We present a strongly-coupled immersed-boundary method for flow–structure interaction problems involving rigid bodies. The method is stable for arbitrary choices of solid-to-fluid mass ratios and for large rigid-body motions. Dynamics of rigid bodies is characterized by the velocity of the center of mass and the angular velocity about the center of mass, which are governed by the translational and rotational equations of motion involving boundary forces. By introducing the summation and distribution operators, equations of motion are coupled with the incompressible Navier-Stokes equations through the no-slip constraint and boundary forces. Boundary forces are regarded as Lagrange multipliers that enable the no-slip constraint to be implicitly determined to arbitrary precision without associated time-step restrictions. Through projections, the current method removes not only slip component of the velocity field but also components of rigid-body dynamics that do not satisfy equations of motion. We verify our method by simulating the free fall of a circular cylinder and further apply our method for investigating the starting of a flow-driven vertical-axis wind turbine.

(2) 主講人：Prof. Jack Koolen (中國科學技術大學, 中國)

講題：On the classification of Q-polynomial distance-regular graphs

時間：108 年 10 月 1 日(星期二) 下午 14:20 – 15:20

Abstract

In the early 1980 Bannai asked whether the Q-polynomial distance-regular graphs with large diameter can be classified. In this talk I will first give an overview what is known. If there is time I will discuss some open problems.

地點：(光復校區) 科學一館 223 室

茶會：當天下午 14:10 (科學一館 205 室)

敬請公告 歡迎參加

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