

The Hong Kong University of Science and Technology

Department of Mathematics

PhD THESIS EXAMINATION

Add force and/or change underlying projection method to improve accuracy of Explicit Robin-Neumann and fully decoupled schemes for the coupling of incompressible fluid with thin-walled structure

By

Mr. Yiyi HUANG

<u>ABSTRACT</u>

Enlightened by added-mass effect and viscosity of fluid, in Explicit Robin-Neumann and fully decoupled schemes for the coupling of incompressible fluid with thin-walled structure, the force between fluid and structure corresponding to viscosity is increased. Numerical experiments demonstrate improvement of accuracy under such modification. To further improve accuracy of fully decoupled schemes, the underlying projection method is replaced.

Date: 10 August 2020, Monday

Time: 2:30 p.m.

ZOOM Meeting: https://hkust.zoom.us/j/5907650662

Thesis Examination Committee:

Chairman	:	Prof. Jensen Tsan Hang LI, PHYS/HKUST
Thesis Supervisor	:	Prof. Mo MU, MATH/HKUST
Member	:	Prof. Kun XU, MATH/HKUST
Member	:	Prof. Jianfeng CAI, MATH/HKUST
Member	:	Prof. Jidong ZHAO, CIVL/HKUST
External Examiner	:	Prof. Eric Tsz Shun CHUNG Department of Mathematics / The Chinese University of Hong Kong

(Open to all faculty and students)