



The Hong Kong Polytechnic University Department of Applied Mathematics

Colloquium

Numerical solutions of the phase-field modeling of interfacial dynamics

By

Prof. Chuanju XU Xiamen University

Abstract

The interfacial dynamics of immiscible and incompressible two-phase fluids is of great interest but computationally not easy to resolve. In this talk, we will focus on a phase field description of the interfacial dynamics. The model is a set of coupling equations, which consists of the Navier-Stokes equations and the Cahn-Hilliard equation. The talk starts with a review of the existing methods for numerical solutions of the Navier-Stokes-Cahn-Hilliard coupling equations. Then we propose and analyze a class of efficient time-stepping schemes for the model. A detailed comparison with existing schemes will be presented, and the advantage of the new schemes are highlighted.

Date: 18 February 2022 (Friday) Time: 10:00-11:00 (Hong Kong Standard Time GMT +8) Venue: Online Talk via Zoom (Meeting ID: 993 4110 9609) Speaker: Prof. Chuanju Xu, Xiamen University Host: Prof. Zhonghua Qiao, The Hong Kong Polytechnic University Click to join: <u>https://polyu.zoom.us/j/99341109609?pwd=M0l6RC9hcFlHZjlib0pCdVUyZ1ZRZz09</u>



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