Applied and Computational Mathematics Seminar

Title: A Geometric Diffuse-Interface Method for Droplet Spreading

Speaker: Lennon O'Naraigh (University College Dublin)

Date: Mon 23rd September 2019 at 1:00PM

Location: Seminar Room SCN 1.25

Abstract: This paper exploits the theory of geometric gradient flows to introduce an alternative regularization of the thin-film equation. The solution properties of this regularization are investigated via a sequence of numerical simulations whose results lead to new perspectives on thin-film behavior. The new perspectives in large-scale droplet-spreading dynamics are elucidated by comparing numerical-simulation results for the solution properties of the current model with corresponding known properties of three different alternative models. The three specific comparisons in solution behavior are made with the slip model, the precursor-film method and the diffuse-interface model.

https://maths.ucd.ie/ACMSeminars/1920/onaraigh.html