



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

MATHEMATICS COLLOQUIUM

**Propagation in reaction-diffusion equations with
obstacles: The effect of geometry**

by

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Abstract

This talk is about travelling fronts going through an array of obstacles for reaction-diffusion equations. I will consider the setting of bistable type equations and periodic obstacles. We show in general that the wave is either blocked or it completely invades the domain. This hinges on results related to a celebrated conjecture of De Giorgi regarding stable solutions of elliptic equations in unbounded domains, a conjecture, which, in turn, is related to the theory of minimal surfaces. I will then describe geometric conditions on the obstacles under which there is either blocking or propagation. I report here on joint work with F. Hamel and H. Matano. I will also recall earlier joint work with L. Caffarelli and L. Nirenberg.

Date : 25 October, 2019 (Friday)
Time : 3:00pm – 4:00pm
**Venue : Lecture Theater F, Academic Building
(Lifts 25-26), HKUST**

All Are Welcome!