Meiji University
Center for Mathematical Modeling and Applications

CMMA Colloquium

第10回 現象数理学コロキアム

10

Propagation in non homogeneous media and applications

The lecture to be given in English.

Abstract:

I will start by describing reaction-diffusion phenomena and reviewing the classical theory for homogeneous Fisher and Kolmogorov-Petrovsky-Piskunov (KPP) equations. It derives the spreading properties in a homogeneous setting. A well known invasion speed governs the asymptotic speed of propagation. This equation plays an important role in a variety of contexts in ecology, biology and physics.

In applications, it is particularly important to understand the effects of heterogeneity and I will present some motivation. In this lecture, I will focus on the effect of inclusion of a line (a "road") with fast diffusion on biological invasions in the plane (the "field"), otherwise homogeneous. I will describe in detail the effect of the road on the speed of invasion as well as the effects of other factors. The results shed light on oriented diffusion in an excitable medium. I report here on results from a series of joint works with Jean-Michel Roquejoffre and Luca Rossi.

講演者：Henri BERESTYCKI
EHESS, France

2015年1月14日(水)
16：30〜17：30
会場：明治大学中野キャンパス
高層棟6階 セミナー室3
※ 講演は英語で行います。参加費無料、事前申し込み不要です。

明治大学先端数理科学インスティテュート
現象数理学研究拠点

MIMS

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