3rd edition of NLEPDE in Hauts-de-France, 27-30 June 2022

Speaker : Franois Hamel (Aix-Marseille Université)

Title : Spreading speeds and one-dimensional symmetry for reaction-diffusion equations in $\mathbb{R}^N$

Abstract :

The talk will focus on the large-time dynamics of bounded solutions of reaction-diffusion equations in $\mathbb{R}^N$ with unbounded initial support. I will discuss invasion properties related to the existence of compactly supported solutions of nonlinear elliptic equations, as well as Freidlin-Gärtner formulas for the spreading speeds of the solutions in any direction. I will also explain some results on the asymptotic one-dimensional symmetry of the elements of the Ω-limit set of the solutions, in the spirit of the famous De Giorgi conjecture on solutions of some elliptic equations in $\mathbb{R}^N$. The talk is based on joint works with Luca Rossi.