

Project PN-II-ID-PCE-2011-3-0027

Analysis and control of deterministic and stochastic diffusion equations

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Abstract

This research project is concerned with the study of the qualitative properties of deterministic and stochastic nonlinear dynamic diffusion equations with a main emphasis on the existence theory in the case of singular diffusion coefficients, localization of solutions, controllability and stabilization. The applications to image processing and description of self-organized criticality of physical processes will be stressed.

The problems considered here are open and in the first line of mathematical research in the field and important for understanding the dynamics of nonlinear diffusion processes perturbed by Gaussian noises. They continue a research line developed in the recent years by the principal investigator and his associates from Romania and abroad. The investigation methods to be used here are new into this context and likely will lead to several new and spectacular results.

Team members:

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http://www.acad.ro/sectii2002/s_matematica/doc2013/VB-CV-english.pdf
http://www.acad.ro/sectii2002/s_matematica/doc2013/VB-list.pdf

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