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Functional inequalities and the symmetry properties of the extremal functions

In this course I will present recent work, in collaboration with J. Dolbeault, M. Loss, G. Tarantello and A. Tertikas, about the symmetry properties of extremal functions for (interpolation) functional inequalities playing an important role in the study of long time behavior of evolution diffusion equations. Optimal constants are rarely known, in fact one can write them explicitly only when the extremals enjoy maximal symmetry. This is why the knowledge of the parameters’ regions where symmetry is achieved is of big importance. In the case of symmetry breaking, the underlying phenomena permitting it are analyzed.

BIBLIOGRAPHY :


• J. Dolbeault, M.J. Esteban, G. Tarantello, A. Tertikas. Radial symmetry and symmetry breaking for some interpolation inequalities. A paraître dans Calculus of Variations and PDE.


All these papers are accessible at:
http://www.dauphine.fr/fr/enseignants/cv/maria