A nonlocal reaction-diffusion problem with memory

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Abstract

In this talk, the asymptotic behavior of a semilinear heat equation with long time memory and non-local diffusion is analyzed in the usual set-up for dynamical systems generated by differential equations with delay terms. This approach is different from the previous published literature on the long time behavior of heat equations with memory which is carried out by the Dafermos transformation. As a consequence, the obtained results provide complete information about the attracting sets for the original problem, instead of the transformed one. In particular, the proved results also generalize and complete previous literature in the local case (see [1, 2]).

References

[1] J. Xu, T. Caraballo, J. Valero. *Asymptotic behavior of a semilinear problem in heat conduction with long time memory and non-local diffusion*, Journal of Differential Equations 327 (2022), 418-447.

[2] J. Xu, T. Caraballo, J. Valero. *Asymptotic behavior of nonlocal partial differential equations with long time memory.* Discrete and Continuous Dynamical Systems, Series S (2022) (to appear).

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