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Prevalent behavior of strongly order preserving semiflows. (English) Zbl 1178.37014
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Summary: Classical results in the theory of monotone semiflows give sufficient conditions for the generic solution to converge toward an equilibrium or toward the set of equilibria (quasiconvergence). In this paper, we provide new formulations of these results in terms of the measure-theoretic notion of prevalence, developed in *J. P. R. Christensen* [*Isr. J. Math.* 13 (1972), Proc. internat. Sympos. partial diff. Equ. Geometry normed lin. Spaces II, 255–260 (1973; [Zbl 0249.43002](#))] and *B. R. Hunt, T. D. Sauer* and *J. A. Yorke* [*Bull. Am. Math. Soc. (N.S.)* 27, No. 2, 217–238 (1992; [Zbl 0763.28009](#))]. For monotone reaction-diffusion systems with Neumann boundary conditions on convex domains, we show the prevalence of the set of continuous initial conditions corresponding to solutions that converge to a spatially homogeneous equilibrium. We also extend a previous generic convergence result to allow its use on Sobolev spaces. Careful attention is given to the measurability of the various sets involved.

MSC:

- [37B05](#) Dynamical systems involving transformations and group actions with special properties (minimality, distality, proximality, expansivity, etc.)
[28D05](#) Measure-preserving transformations

Cited in 9 Documents

Keywords:

[compact zero-dimensional space](#); [commuting transformations](#); [periodic points](#); [minimal actions](#); [invariant measures](#)

Full Text: [DOI](#) [arXiv](#)

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