Koksch, Norbert

A modified strong squeezing property and the existence of inertial manifolds of semiflows.
(English) Zbl 1072.37053
Arch. Math., Brno 36, Suppl., 477-486 (2000).

Sometimes so-called cone invariance and squeezing properties are used to show the existence of inertial manifolds for evolution equations. The author propose and motivate a modification of these properties for semiflows. It is shown that the cone invariance and modified squeezing properties together with a coercivity assumption are sufficient for a general, continuous semiflow to have an inertial manifold with exponential tracking property. An application to evolution equations is considered and some possible extensions are discussed as well.

Reviewer: Josef Diblík (Brno)

MSC:

37L25 Inertial manifolds and other invariant attracting sets of infinite-dimensional dissipative dynamical systems
37D10 Invariant manifold theory for dynamical systems
34C30 Manifolds of solutions of ODE (MSC2000)

Keywords:

semiflow; inertial manifold; asymptotic phase; cone invariance property

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