

Linearization of vector fields and embedding of diffeomorphisms in flows via Nash–Moser theorem

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Abstract :

In the first part of this paper we give suitable spectral properties of the adjoint operators induced by appropriate perturbations of some hyperbolic linear vector fields. These properties are useful to prove general facts based on the Nash–Moser inverse function theorem. In the second part of this work we study circumstances where a global linearization of a vector field X in a real numerical space is feasible and where some diffeomorphisms which are close to $\exp(X)$ can be embedded in a flow.

Keywords : Exponential map; Category of tame Fréchet manifolds; Nash–Moser function inverse theorem.

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