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Gevrey and analytic local models for families of vector fields

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Abstract

We give sufficient conditions on the spectrum at the equilibrium point such that a Gevrey- s family can be Gevrey- s conjugated to a simplified form, for some s between 0 and 1. Local analytic results (i.e. $s = 0$) are obtained as a special case, including the classical Poincaré theorems and the analytic stable and unstable manifold theorem. As another special case we show that certain center manifolds of analytic vector fields are of Gevrey-1 type. In a special case, we determine the summability properties as well.

Joint work with P. Bonckaert.