

Global solvability and global hypoellipticity in Gevrey classes for vector fields on the torus

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Abstract

We present a complete characterization to the questions concerning existence and regularity of periodic solutions, in Gevrey classes, for vector fields of tube type. The results depend on Diophantine conditions and, also, connectedness of certain sublevel sets. This last condition is linked to the condition (P) of Nirenberg and Treves.