INVARIANT MANIFOLDS OF NON-AUTONOMOUS ODEs

ANTÓNIO J. G. BENTO

Assuming that X is a Banach space, $B(X)$ is the Banach algebra of all bounded linear operators acting on X, $A : [0, +\infty[\to B(X)$ is a continuous function and the differential equation

$$v'(t) = A(t)v(t)$$

admits a very general type of dichotomy, we will present sufficient conditions for the existence of invariant manifolds for the differential equation

$$v'(t) = A(t)v(t) + f(t, v(t)),$$

where $f\colon [0, +\infty[\times X \to X$ is a continuous function such that $f(t, 0) = 0$ and, for all $t \in [0, +\infty[$, $f(t, \cdot)$ is Lipschitz or locally Lipschitz. This talk is based on a joint work with C. M. Silva.

António J. G. Bento, Department of Mathematics, University of Beira Interior, 6201-001 Covilhã, Portugal

E-mail address: bento@ubi.pt