

CONTINUATION RESULTS FOR RETARDED FUNCTIONAL DIFFERENTIAL EQUATIONS ON MANIFOLDS

PIERLUIGI BENEVIERI *

We investigate the following parametrized second order retarded functional equation on a possibly noncompact manifold $M \subseteq \mathbb{R}^k$:

$$x''_{\pi}(t) = \lambda f(t, x_t), \quad \lambda \geq 0,$$

where: $x''_{\pi}(t)$ stands for the tangential part of the acceleration $x''(t) \in \mathbb{R}^k$ at the point $x(t) \in M$.

We prove existence and global continuation results for T -periodic solutions. The approach is topological and is based on the degree theory for tangent vector fields as well as on the fixed point index theory.

Joint work with Alessandro Calamai (Marche Polytechnic University), Massimo Furi (University of Florence) and Maria Patrizia Pera (University of Florence)

*University of São Paulo email: pluigi@ime.usp.br