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Title: Global Continuation of Periodic Solutions for Retarded Functional Differential Equations on Manifolds

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Abstract: In this talk, I will present some results on the existence and global bifurcation of T -periodic solutions to first and second order retarded functional differential equations with infinite delay on boundaryless smooth manifolds. I will consider both cases of a topologically nontrivial compact manifold (e.g., an even dimensional sphere) and of a possibly noncompact constraint, assuming in the latter case that the topological degree of a suitable tangent vector field is nonzero. The approach is topological and based on the fixed point index theory for locally compact maps on metric ANRs.

Finally, I will show how to deduce from our results a Rabinowitz-type global bifurcation result as well as a Mawhin-type continuation principle.