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Dynamics of perturbed p-Laplace problems

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Stationary solutions, connecting orbits and periodic solutions for a class of evolution equations with p-Laplace operator shall be studied. We shall use the theory of evolution equations involving m-accretive and monotone operators to construct semiflows and evolution systems. We shall also examine the continuity and compactness properties of the translation along trajectories operator in order to apply topological methods based on homotopy invariants such as Conley homotopy and fixed point indices. As a result, we obtain effective criteria for the existence of stationary solutions and connecting orbits as well as co-bifurcations of periodic solutions.