
HOMOCLINICS OF HAMILTONIAN SYSTEMS

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A spectral flow for path of selfadjoint Fredholm operators that are equivariant under the orthogonal action of a compact Lie group G will be presented. This topological invariant with values in a real representation ring $RO(G)$ turns out to be an effective tool for studying bifurcation phenomena with symmetries both in ODE's and PDE's. In order to show how the equivariant spectral flow works in practice, bifurcation of homoclinic solutions of Hamiltonian systems will be discussed.

The talk is based on the paper *The Equivariant Spectral Flow and Bifurcation for Functionals with Symmetries - Part I* by Marek Izydorek, Joanna Janczewska, Maciej Starostka, Nils Waterstraat, arxiv.org/abs/2306.01170

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