

COMPUTING GLOBAL INVARIANT MANIFOLDS OF DYNAMICAL SYSTEMS

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Global bifurcations of dynamical systems are characterised by the re-arrangement of the higher dimensional stable and unstable manifolds of invariant objects under parameter variation. This may result in drastic changes of the dynamics, including transitions to chaotic regimes, transforming or creating basins of attraction and, ultimately, reorganising the overall structure of the phase space. The aim of this talk is to discuss how the study of global invariant manifolds by analytical and computational methods allows one to obtain deeper insight into the nature of global bifurcations.