Center manifold theory for discrete dynamical systems

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Using the center manifold theory for maps, we derive a theorem for the existence of backward bifurcation at bifurcation points of discrete dynamical systems. This theorem is an analogue of a theorem in [3] for continuous dynamical systems. We discuss applications to discrete dynamical systems in general [2], but more specifically those arising as dicretisations of continuous dynamical systems via the nonstandard finite difference method [1].

Keywords: Bifurcation Analysis, Center Manifold Theory, Discrete Epidemiological Models.

References

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