

Invariant Manifolds and Grobman-Hartman Theorem for Equations with Degenerate Operator at the Derivative

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Abstract

Analog of Grobman-Hartman theorem about stable and unstable manifolds solutions for differential equations in Banach spaces with degenerate Fredholm operator at the derivative are proved. In contrast to usual evolution equation here central manifold arises even in the case of spectrum absence on the imaginary axis. Jordan chains tools and implicit operator theorem are used. The obtained results allow to develop center manifold methods for computation of bifurcation solution asymptotics and their stability investigation.

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