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Detecting and locating near-optimal almost-invariant sets and cycles. (English summary)
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Rather than characterizing behaviors of nonlinear dynamical systems at the level of trajectories, the paper deals with information obtained by following the evolution of sets. While individual trajectories may be entirely unpredictable, there are often collections of sets that behave in a very predictable way.

The work begins with a formal definition of what is meant by optimal almost-invariance. The approach to identifying an optimal decomposition of almost-invariant sets is to discretize the dynamics to produce a large, finite-state Markov chain first, followed by creating a directed, weighted graph from the transition matrix of the Markov chain and reformulating the decomposition problem into one of minimal graph cuts. Almost-cycles are briefly discussed and an example is given.

Reviewed by *T. Y. Li*

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Note: This list, extracted from the PDF form of the original paper, may contain data conversion errors, almost all limited to the mathematical expressions.

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