The Method of Topological Sections in the Rigorous Numerics of Dynamical Systems

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In computer assisted proofs of chaos in dynamical systems based on topological methods it is nesessary to obtain bounds of images of many relatively large sets after a relatively long period of time. This is in general a very difficult taks because of the exponential growth of deviation estimates. The standard techniques are often not sufficient and usually intermediate sections must be inserted.
We show how moving the information to the topological level as quickly as possible may significanlty improve the results.