## Computer-assisted proofs, proof assistants and visualization in dynamical systems



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## "Rigorous enclosure of the discrete spectrum for transfer operators"

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abstract: In this work, in collaboration with Blumenthal and Taylor-Crush, I present a generalization of a fundamental result, the Gerschgorin circle theorem, to obtain enclosures of the discrete spectrum of a transfer operator preserving a strong Banach space compactly embedded in a weak Banach space. The enclosures are obtained by rigorously bounding the weak resolvent norm of a finite rank approximation of the transfer operator. This result has important consequences, allowing us to understand the finer statistical properties of systems satisfying a Lasota-Yorke inequality, as uniformly expanding maps and systems with additive noise.

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