

Conley Theory for Hybrid Systems

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Abstract

The development of algorithmic foundations for Conley theory have led to a new computational framework for studying nonlinear dynamics. This approach provides concise, robust characterizations of global dynamics in terms of order theory and algebra. In this talk we will discuss the development of such a framework for hybrid systems. In the case where the trapping guard condition holds, the hybrid suspension semiflow construction facilitates the application of Conley theory, but much of the theory can be applied more broadly. We will describe both theoretical and algorithmic/computational challenges.

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