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Local entropy theory and descriptive complexity

Local entropy theory is the area of dynamical systems concerned with giving topological and combinatorial descriptions of "where" and how the entropy of a dynamical system is occurring. In this mini-course we will give an introduction to the basic results of this theory, and we will show how it can be used to prove seemingly unrelated results. For example, we will show how to find homoclinic points of algebraic actions and understand the descriptive complexity of dynamical systems with completely positive entropy.