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Speedups of Topological Systems

We define a speedup of a topological dynamical system $T : X \rightarrow X$ to be another topological system of the form $x \mapsto T^{p(x)}(x)$ for some function $p : X \rightarrow \mathbb{N}$. The speedup relation is an analog of one studied in the measurable category by Arnoux-Ornstein-Weiss and others. In this talk the speaker will discuss characterizations of topological speedups for minimal actions of a Cantor set, under various assumptions on the function p . These characterizations are closely related the orbit equivalence results of Giordano-Putnam-Skau and in fact make use of the same unital ordered group invariants. Like orbit equivalence, the speedup relation looks different when different restrictions are placed on p , e.g. bounded, or continuous except at one point, and the speaker will discuss recent results in each setting.