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A notion of entropy in the realm of coarse geometry and its relationship with the algebraic entropy

The notion of entropy appears in many branches of mathematics. In each setting (e.g., probability spaces, sets, topological spaces) entropy is a non-negative real-valued function measuring the randomness and disorder that a self-morphism creates. Recently, a notion of entropy in coarse geometry, which is the study of large-scale properties of spaces, was proposed. The objects that are considered in this theory are called coarse spaces, which are structures, introduced by Roe, that capture and generalise the large-scale properties of metric spaces, and the morphisms between them are bornologous maps. The aim of this talk is introducing that new coarse entropy, defined for bornologous self-maps of locally finite coarse spaces, underlining connections with other known entropies. With particular attention we will compare the coarse entropy with the algebraic entropy defined on endomorphisms of groups, showing that these two notions coincide in many situations.