

Entropy in the context of aperiodic order

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In this talk we study different notions of entropy for Delone sets of finite local complexity in the setting of (metrizable and sigma-compact) locally compact Abelian groups (LCA groups).

For Delone sets of finite local complexity (FLC) in the euclidean space it is well known that the patch counting entropy equals the topological entropy of an associated shift system. We present an example of a FLC Delone set in a LCA group for which the topological entropy and the patch counting entropy are not equal.

It was suggested by J. Lagarias for FLC Delone sets in the euclidean space that the patch counting entropy can always be computed as a limit. We discuss why the Ornstein-Weiss lemma can not directly be used in order to see this claim and present that the correspondence between the topological and the patch counting entropy can be used in order to show that the limit in the patch counting entropy formula exists for compactly generated LCA groups. We present counterexamples where the limit does not exist in the context of general LCA groups.