

On higher order regional proximality for arbitrary group actions

Yonatan Gutman

Polish Academy of Sciences & Oxford, Poland

y.gutman@impan.pl

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Ellis & Gottschalk introduced the regional proximal relation in 1960 whereas the higher order regional proximal relations for Abelian group actions were introduced by Host, Kra & Maass in 2010. The interest in these relations lies in their role in the structural theory of topological dynamical systems. For example, for amenable minimal group actions the regional proximal relation is an equivalence relation. Moreover the quotient by this equivalence relation is the maximal equicontinuous factor. In this talk I will discuss a generalization of the higher order regional proximal relations suitable for an arbitrary acting group. We will show that for distal actions this relation is an equivalence relation and explore its relation to structural theory. Joint work with Freddie Manners and Péter Varjú.