

# Seminarium geometrów

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## Means on groups and degrees of commutativity

Abstract: Given a finite group  $G$ , one can count the proportion of pairs of elements in  $G$  that commute – giving a number, denoted  $\text{dc}(G)$ , behaviour of which has been studied since the 1960s. Such a notion has straightforward generalisations to residually finite or amenable groups. To make sense of this for other infinite groups  $G$ , one needs to define some sort of a nice measure or a mean on  $G$ . In this talk, I will explain how such means – more specifically, finitely additive probability means that give the “correct” answer for cosets of subgroups – can be constructed. As an application of these methods, one can define  $\text{dc}(G)$  for any group  $G$ , and show that  $\text{dc}(G) > 0$  if and only if  $G$  is finite-by-abelian-by-finite.

This is joint work with Armando Martino.

*Streaming via ZOOM:*

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