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**JULIA WOLF**, Bristol

*Counting monochromatic structures in finite abelian groups*

It is well known (and a result of Goodman) that a random 2-colouring of the edges of the complete graph  $K_n$  contains asymptotically the minimum number of monochromatic triangles ( $K_3$ s). Erdős conjectured that this was also true of monochromatic copies of  $K_4$ , but his conjecture was disproved by Thomason in 1989. The question of determining for which small graphs Goodman's result holds true remains wide open. In this talk we explore an arithmetic analogue of this question: what can be said about the number of monochromatic additive configurations in 2-colourings of finite abelian groups?