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Title: Algebraic actions of discrete groups

Abstract: This is a joint work with Cantat. We study groups of automorphisms and birational transformations of quasi-projective varieties by  $p$ -adic methods. For instance, we show that if  $SL_n(\mathbb{Z})$  acts faithfully on a complex quasi-projective variety  $X$  by birational transformations, then  $\dim(X) \geq n-1$  and  $X$  is rational if  $\dim(X)=n-1$ .