# INVARIABLE GENERATION OF GROUPS

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ABSTRACT. A subset $X$ of a group $G$ invariably generates $G$ if, when each element of $X$ is replaced by an arbitrary conjugate, the resulting set generates $G$. This concept was introduced by Dixon in the early nineties with motivations from computational Galois theory. We will review these motivations, their intimate connections with permutation groups, and some "pathologies" occuring in case of infinite groups.

We will then analyse the behaviour of minimal invariable generating sets of finite groups, i.e., sets $X$ which invariably generate a finite group $G$, but which do not invariably generate anymore whenever any element is removed from them. The focus will be on the one hand on finite soluble groups, and on the other hand on finite simple groups.