

# Minimal operations over permutation groups

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## Abstract

We classify the possible types of minimal operations above an arbitrary permutation group. Above the trivial group, a theorem of Rosenberg says that there are five types of minimal operations. We show that above any non-trivial permutation group there are at most four such types. Indeed, except above Boolean groups acting freely on a set, there are only three. In particular, this is the case for oligomorphic permutation groups, for which we improve a result of Bodirsky and Chen. Building on these results, we answer some questions of Bodirsky related to infinite-domain constraint satisfaction problems (CSPs). This is joint work with Michael Pinsker.