

Title: Permutation representations on invertible matrices.

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Abstract: We discuss permutation representations which are obtained by the natural action of $\text{Sym}(n) \times \text{Sym}(n)$ on itself as its diagonal subgroup on some special sets of invertible $(0,1)$ -matrices, defined by simple combinatorial attributes. We decompose these representations into irreducibles. The multiplicities involved have a nice combinatorial interpretation. We also generalize known results on asymptotic behavior of the conjugacy representation of $\text{Sym}(n)$. This is joint work with Eli Bagno.