Notes: Equivariant Chow Polynomial of a Matroid September 1, 2024

Let G be a group and E be a G-set. Let $\mathcal{A}$ be a set of multisets over E. The action of G on E extends to action on each multiset and we say that G acts on $\mathcal{A}$ if $\mathcal{A}$ is G-invariant.

Let V denote the permutation representation of G on the set $\mathcal{A}$. For a multiset $A \in \mathcal{A}$, let G_A denote the stabilizer subgroup of A in G and T_{G_A} denote the trivial representation of G_A. Then,

$$V = \bigoplus_{\underline{A} \in \mathcal{A}/G} \mathrm{Ind}_{G_A}^{G}(T_{G_A})$$

Let G be a group and E be a G-set. Let V denote the permutation representation of G on the set E. For $x \in E$, Let G_x denote the stabilizer subgroup of x in G and T_{G_x} denote the trivial representation of G_x. Then,

$$V = \bigoplus_{\underline{x} \in E/G} \mathrm{Ind}_{G_x}^{G}(T_{G_x})$$