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Visible actions on complex vector spaces

Abstract. I plan to explain that the multiplicity-free space has a strongly visible actions. Let V be a vector space over $\mathbb{C}$ and $G_{\mathbb{C}}$ be a connected complex reductive Lie group. Given a holomorphic representation of $G_{\mathbb{C}}$ on V, we define a repesentation π on the polynomial ring $\mathbb{C}[V]$ of $G_{\mathbb{C}}$. We show that the polynomial representation π is multiplicity-free if and only if the action of a maximal compact subgroup of $G_{\mathbb{C}}$ on V is strongly visible.