Journal of Lie Theory 14 (2004) 509–522

Alan T. Huckleberry, Joseph A. Wolf

Injectivity of the Double Fibration Transform for Cycle Spaces of Flag Domains

The basic setup consists of a complex flag manifold $Z = G/Q$ where G is a complex semisimple Lie group and Q is a parabolic subgroup, an open orbit $D = G_0(z) \subset Z$ where G_0 is a real form of G, and a G_0–homogeneous holomorphic vector bundle $\mathbb{E} \to D$. The topic here is the double fibration transform $\mathcal{P} : H^q(D; \mathcal{O}(\mathbb{E})) \to H^0(\mathcal{M}_D; \mathcal{O}(\mathbb{E}'))$ where q is given by the geometry of D, $\mathcal{M}_D$ is the cycle space of D, and $\mathbb{E}' \to \mathcal{M}_D$ is a certain naturally derived holomorphic vector bundle. Schubert intersection theory is used to show that $\mathcal{P}$ is injective whenever $\mathbb{E}$ is sufficiently negative.