# On the reducing subspaces of proper holomorphic multipliers on the Bergman space

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In this talk, we describe a family of joint reducing subspaces of the tuple of multiplication operators $M_f$ on the Bergman space, where $f$ is a proper holomorphic function between two domains in $\mathbb{C}^n$. If $f$ is factored by automorphisms $G$, then the family can be indexed by the equivalence classes of irreducible representations of $G$. We also show that the restriction operators $M_f$ on reducing subspaces of the family are mutually unitarily inequivalent. As a consequence of these observations, we also derive a transformation rule for the weighted Bergman kernels under proper holomorphic maps. In particular, it coincides with Steven Bell's transformation rule for the Bergman kernels for sign representations.

This talk is based on a joint work with S. Biswas, S. Datta, and S. Shyam Roy.