

## BERGMAN SPACES OF $G$ -MANIFOLDS

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**Abstract:** Let  $M$  be a complex manifold with strongly pseudoconvex boundary, and suppose that a Lie group  $G$  acts freely and properly on  $M$  by biholomorphisms, with compact quotient (i.e.  $M$  is the total space of a principal bundle  $G \rightarrow M \rightarrow X$  where  $X$  is a compact manifold with boundary). Providing  $M$  with a  $G$ -invariant measure, we are interested in the Bergman space of  $L^2$  holomorphic functions on  $M$ . In the case when  $G$  is unimodular, we give sufficient conditions - based on the geometry of the orbits of  $G$  - for the Bergman space of  $M$  to be large.