

Meeting: 1003, Atlanta, Georgia, SS 23A, AMS Special Session on Representations of Lie Algebras, I

1003-14-414 **Arzu Boysal*** (boysal@email.unc.edu), University of North Carolina, Department of Mathematics, CB# 3250, Phillips Hall, Chapel Hill, NC 27599, and **Shrawan Kumar**. *Explicit Determination of the Picard Group of Moduli Spaces of Semi-Stable G -Bundles on Curves.*

Let \mathcal{C} be a smooth irreducible projective curve over the complex numbers and let G be a simple simply-connected complex algebraic group. Let $\mathfrak{M} = \mathfrak{M}(G, \mathcal{C})$ be the moduli space of semistable principal G -bundles on \mathcal{C} .

By an earlier result of Kumar-Narasimhan, the Picard group of \mathfrak{M} is isomorphic with the group of integers. However, in their work the generator of the Picard group was not determined explicitly. The aim of this paper to give the generator ‘explicitly.’ The proof involves an interesting mix of geometry, topology and counting number of lattice points and uses the celebrated Verlinde formula. (Received September 14, 2004)