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*Vanishing theorems in the cohomology ring of the moduli space of parabolic vector bundles*

Let  $\Sigma$  be a compact connected oriented 2-manifold of genus  $g \geq 2$ , and let  $p$  be a point on  $\Sigma$ . We define a space  $S_g(t)$  consisting of certain irreducible representations of the fundamental group of  $\Sigma \setminus p$ , modulo conjugation by  $SU(n)$ . This space has interpretations in algebraic geometry, gauge theory and topological quantum field theory; in particular if  $\Sigma$  has a Kahler structure then  $S_g(t)$  is the moduli space of parabolic vector bundles of rank  $n$  over  $\Sigma$ .

For  $n = 2$ , Weitsman considered a tautological line bundle on  $S_g(t)$ , and proved that the  $(2g)^{th}$  power of its first Chern class vanishes, as conjectured by Newstead. In this talk I will present his proof and then outline my extension of his work to  $SU(n)$  and  $SO(2n + 1)$ .