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**Lisa Jeffrey\*** ([jeffrey@math.toronto.edu](mailto:jeffrey@math.toronto.edu)), Toronto, Ontario M5S 2E4, Canada. *The degree of the Chern-Simons line bundle*. Preliminary report.

(Joint work with Dan Ramras and Jonathan Weitsman)

The Chern-Simons line bundle (over the moduli space of flat connections on a trivial principal  $G$ -bundle on a 2-manifold) was studied using the Chern-Simons cocycle by Ramadas, Singer and Weitsman in 1989. We revisit this construction and use its methods to show that the degree of this line bundle is 1 in the case when the 2-manifold is a 2-torus and  $G=\text{SU}(2)$ .

Our result resolves the following conjecture of Lawton and Ramras. Let  $G=\text{SU}(n)$  and let  $S$  be an arbitrary 2-manifold. The classifying map for the Chern-Simons line bundle is a homotopy equivalence in the limit as  $n$  approaches infinity.

References: S. Lawton, D. Ramras, Covering spaces of character varieties. Preprint arXiv:1402.0781 (2014)

T.R. Ramadas, I.M. Singer, J. Weitsman, Some comments on Chern-Simons gauge theory, Commun. Math. Phys. 126 (1989) 409-420.

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