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Daniel Berwick-Evans* (danbe@illinois.edu). *Equivariant elliptic cohomology and characters of loop group representations*. Preliminary report.

I'll describe a geometric model for equivariant elliptic cohomology with complex coefficients in terms of sections of line bundles on the moduli stack of G -bundles on $2|1$ -dimensional super tori. Path integral techniques from gauge theory pick out preferred sections of these bundles. Following the work of Looijenga and Grojnowski, I'll explain how to identify such sections with the characters of loop group representations. On the cohomological side, these sections define elliptic Euler classes for G -bundles. Time permitting, I'll comment on how this geometry is related to elliptic formal group laws and the string orientation of topological modular forms. This is joint work with Arnav Tripathy. (Received August 26, 2016)