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Moduli space of flat $\mathrm{SU}(2)$ *bundles over nonorientable surfaces*

I will present a computation of the cohomology groups of the moduli space of flat $\mathrm{SU}(2)$ bundles over a closed nonorientable surface Σ, which we identify via the holonomy map with $X/\mathrm{SU}(2)$, where $X := \mathrm{Hom}\big(\pi_1(\Sigma), \mathrm{SU}(2)\big)$. The strategy will be to determine the equivariant cohomology ring $H^*_{\mathrm{SU}(2)}(X)$, and then pass to $H^*\big(X/\mathrm{SU}(2)\big)$ via a pair of long exact sequences and localization.