

# Topology of moduli spaces of vector bundles on a real algebraic curve.

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**Abstract.** Moduli spaces of vector bundles on a real algebraic curve are naturally Lagrangian quotients obtained from spaces of unitary connections. In particular, orbits of semi-stable real structures are in bijective correspondence with unitary orbits of solutions to Yang-Mills equations satisfying an additional Galois symmetry. This presentation as a quotient enables us to compute the Poincaré series of these moduli spaces for cohomology with mod 2 coefficients. This is joint work with Chiu-Chu Melissa Liu (Columbia University).