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The genus 2 moduli space

(Joint with Nan-Kuo Ho, Khoa Dang Nguyen and Eugene Xia)

The moduli space of gauge equivalence classes of flat connections on a 2-manifold of genus 2 was proved to be isomorphic to complex projective 3-space by Narasimhan and Ramanan in 1969. Their proof used algebraic geometry. We use the Hamiltonian flows of Goldman (which were shown by Jeffrey and Weitsman to give moment maps for Hamiltonian circle actions on an open dense set) to give an identification between an open dense set of this moduli space and an open dense set of complex projective space.