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Gauged pseudoholomorphic maps on cylindrical end surfaces

Salamon, Mundet, and others introduced the notion of "vortex equations" which simultaneously generalize Gromov's pseudoholomorphic curves and the notion of flat connection on a surface. We study the moduli space of solutions to the vortex equations on curves with cylindrical end, and show how they fit into the framework of loop group actions/group-valued moment maps developed by Alekseev, Meinrenken, and the second author. This leads to invariants of a Hamiltonian G-manifold taking values in the certain spaces of invariant distributions on a group, which is analogous to the orbifold Gromov–Witten invariants of Chen–Ruan.

This is joint with Eduardo Gonzalez.