

The Yang-Mills gradient flow over the 2-sphere and loop groups

Jan Swoboda
ETH Zürich

Abstract

In this talk I will relate the L^2 -gradient flow of the Yang-Mills functional $\mathcal{YM}$ on a principal G -bundle P over the 2-sphere to that of the energy functional $\mathcal{E}$ on loops in the Lie group G . I discuss how this can be used to construct an isomorphism between the equivariant Morse homologies of the manifold $\mathcal{A}(P)/\mathcal{G}_0$ of (based) gauge equivalence classes of connections on P and the manifold ΩG of based loops in G .