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Hyperpolygon spaces and parabolic Higgs bundles

Hyperpolygons spaces are a family of (finite dimensional, non-compact) hyperkähler spaces, that can be obtained from coadjoint orbits by hyperkähler reduction. In joint work with L. Godinho, we show that these space are diffeomorphic (in fact, symplectomorphic) to certain families of parabolic Higgs bundles. In this talk I will describe this relation and use it to analyse the fixed points locus of a natural involution on the moduli space of parabolic Higgs bundles. The fixed point locus of this involution is identified with the moduli spaces of polygons in Minkowski 3-space and the identification yields information on the connected components of the fixed point locus.

This is based on joint works with Leonor Godinho and with Indranil Biswas, Carlos Florentino and Leonor Godinho