

Remarks on Higgs bundles twisted by a vector bundle

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Abstract-

For any V -twisted Higgs bundle on a compact connected Riemann surface X , where V is a holomorphic vector bundle of rank two over X , there are two associated Higgs bundles on X , twisted by line bundles, which are constructed using a Hecke transformation on V . We characterize all such pairs of Higgs bundles (twisted by line bundles) given by the V -twisted Higgs bundles. Using this characterization, we provide a spectral correspondence for the moduli space, identifying V -twisted Higgs bundles with the direct images of certain rank one torsionfree Higgs sheaves twisted by a line bundle on a spectral covering of the curve X .

Index Terms- Twisted Higgs bundle; Hecke transformation; spectral curve; Fibrado de Higgs retorcido, transformación de Hecke, curva espectral.

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