

Abstract

The moduli space of Higgs bundles, or equivalently the space of solutions of Hitchin equations over Riemann surfaces has been a focus of intensive studies in algebraic geometry, symplectic geometry, topology and supersymmetric field theory. The recent progress in studying its asymptotic geometry by means of limiting configuration of Hitchin equations has been investigated by Mazzeo, Swoboda, Weiss, Witt (2014), Mochizuki (2016) and Fredrickson (2018) for some cases of $SL(n, \mathbb{C})$ Lie group.

In this talk I will present a new result of limiting behavior of solutions of Hitchin equation for the real Lie group $SU(1,2)$, as a first step in extending the study to G -Higgs bundles with G a real rank-one Lie group. The proof relies on the construction of approximate solutions by gluing local models on disks to solution of decoupled equation which converges to limiting configuration after appropriate scaling. A by-product is a complete description of the Hitchin fiber of $SU(1,2)$ Higgs bundle, i.e. its spectral data by means of Hecke transformations.