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**Botong Wang\*** ([wang191@math.purdue.edu](mailto:wang191@math.purdue.edu)). *Filtered local systems and parabolic Higgs bundles.*

Moduli space of (parabolic) Higgs bundles over (noncompact) Riemann surfaces are well studied in the past twenty years. Based on Mochizuki's work on Hitchin-Kobayashi correspondence for quasi-projective varieties, we study the moduli space of stable parabolic Higgs bundles for higher dimensional varieties. Similar to the curve case, we prove some isomonodromy loci of the moduli have natural Hyperkähler structures.

Toward finding examples of parabolic Higgs bundles, we give some necessary conditions of stable parabolic Higgs bundles of trivial characteristic numbers. This is done using some perturbation method. And applying the same method to the filtered local systems, I will reprove some properties of the fundamental groups of quasi-projective varieties due to M. Nori. (Received February 08, 2012)