



## Mathematics and CS Seminar

# **Branes on the singular locus of the Hitchin system via Borel and other parabolic subgroups**

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**Host: Tamas Hausel**

The moduli space of Higgs bundles has an extremely rich geometry, it is a hyperKähler variety and fibrates over a vector space becoming an integrable system named the Hitchin system. Its importance in theoretical physics comes from the fact that a the dimensional reduction of an  $N=4$  Super Yang-Mills gauge theory can be rewritten as a 2-dimensional sigma-model with the Hitchin system as a target. In this context, Kapustin and Witten reinterpreted the classical limit of S-duality of the original SYM gauge theory as mirror symmetry in the target (the Hitchin system). They also introduced the appropriate notion of branes in the Hitchin system respecting the hyperKähler structure. In this talk I will study the behaviour under mirror symmetry of a family of branes living on the singular locus of the Hitchin system. I will also describe their geometry and the role of the Borel subgroup. The picture can be generalized to other parabolic subgroups.

**Thursday, September 27, 2018 01:30pm - 03:30pm**

IST Austria Campus Big Seminar room Ground floor / Office Bldg West (I21.EG.101)



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