## Geometry, Groups and Topology



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## Positivity and higher Teichmüller theory

Friday, October 14, 2016 2:00 PM (50 minutes)

Classical Teichmüller space describes the space of conformal structures on a given topological surface S. It plays an important role in several areas of mathematics as well as in theoretical physics. Higher Teichmüller theory generalizes several aspects of classical Teichmüller theory to the context of Lie groups of higher rank, such as the symplectic group PSp(2n; R) or the special linear group PSL(n; R). So far, two families of higher Teichmüller spaces are known. The Hitchin component, which is defined when the Lie group is a split real forms, and the space of maximal representations, which is defined for Lie groups of Hermitian type. Interestingly, both families are linked with various notions of positivity in Lie groups.

In this talk I will give an introduction to higher Teichmüller theory, introduce new positive structures on Lie groups and discuss the (partly conjectural) relation between the two.

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