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Mathematics Colloquium

Hodge theory and Riemannian metrics on character varieties

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Abstract

In this talk, we will review some basic Hodge theory which leads to the construction of the Weil-Petersson metric on Teichmüller space. Then, we will show how this type of construction fits into a general framework of constructing L^2-type Riemannian metrics on character varieties for closed surface groups. This construction includes as special cases the Higgs bundle hyper-Kähler metrics on character varieties, as well as the recent construction of Qiongling Li of a Riemannian metric on the deformation space of strictly convex projective structures. We will discuss some basic features of this construction, in particular its compatibility with the natural symplectic structure of the character variety due to Atiyah-Bott-Goldman.

Wednesday, 03 February 2016, 4pm

Smith Hall 204

Tea and refreshments will be served at 3:45pm.