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Teichmüller Theory Seminar

The Goldman symplectic form on the Hitchin component

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Abstract

Let S be a closed, orientable, connected surface of genus at least 2. We prove that any ideal triangulation on S determines a symplectic trivialization (with respect to the Goldman symplectic form) of the tangent bundle of the Hitchin component. One can then consider the parallel flows with respect to the flat structure given by this trivialization. We give a geometric description of all such flows in terms of explicit deformations of Frenet curves, and prove that all such flows are Hamiltonian. Applying this to a particular ideal triangulation allows us to find a maximal family of Poisson commuting Hamiltonian flows on the Hitchin component. This generalizes the well-known fact that on Teichmüller space, the twist flows along a pants decomposition of S is a maximal family of Poisson commuting Hamiltonian flows. This is joint work with Zhe Sun and Anna Wienhard.

Monday, 20 November 2017, 4pm

Smith Hall 204