

# MATH 848C GEOMETRIC STRUCTURES ON MANIFOLDS

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Fall 2015

A *locally homogeneous geometric structure* in the sense of Ehresmann-Thurston is a local coordinate system taking values in a *classical geometry*. For example a *Euclidean structure* on a manifold is the same as a Riemannian metric with vanishing curvature. Many traditional geometric structures can be expressed in terms of these structures, which provide a rich framework for studying interesting examples. These examples include affine and projective connections, conformal structures, and many examples from Kähler and symplectic geometry.

In this semester I plan to discuss several aspects of *higher Teichmüller theory*, focusing on the following topics:

- Fine structure of the moduli spaces, including Poisson structures and Hamiltonian flows on moduli spaces;
- Kobayashi metric and projective/affine hyperbolicity;
- Explicit construction of Hitchin representations of surface groups;
- Klingler's recently announced proof of the Chern-Sullivan Euler characteristic conjecture for closed special affine manifolds;
- Relation between Anosov representations and geometric structures.

The class meets Tuesday-Thursday 11:00-12:30.

