Abstract

A CP^1-structure is a geometric structure on a Riemann surface, and it corresponds to a holomorphic quadratic differential on the Riemann surface. In addition, the holonomy of a CP^1-structure is a homomorphism from the fundamental group of the base surface into PSL(2, C). The set of CP^1-structures on every compact Riemann surface property embeds into the PSL(2,C)-character variety, so that its image is a half-dimensional complex analytic submanifold (Poincare holonomy variety). In the first lecture, we first go over some basics of CP^1-structures, including a cut-and-paste operation, called grafting. Then in the second lecture we discuss some further properties of the half-dimensional submanifolds.