

The complex hyperbolic geometry of certain moduli spaces of tori

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Abstract: Generalising an idea of Thurston, Veech defines homogeneous structures on several moduli spaces of flat surfaces with cone type singularities. The specific case of tori provides natural (non-complete) complex hyperbolic structures on certain complex manifolds.

We provide an interpretation of the metric completion of these manifolds in terms of degenerations of the underlying flat structures. This leads to a construction of complex hyperbolic cone-manifolds of finite volume, whose holonomy are in a finite number of case an arithmetic lattice.

This is joint work with Luc Pirio (CNRS Versailles).