Higher Teichmüller theory and thermodynamic formalism

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Abstract

It is well known that the Teichmüller space of a compact oriented surface corresponds to a connected component of the space of representations of its fundamental group into $PSL(2,\mathbb{R})$. We will discuss representations of this group into the higher rank Lie groups $PSL(d,\mathbb{R})$ for $d \geqslant 3$ and show that the connected component in the representation space corresponding to the Teichmüller space supports a real analytic Riemannian metric analogous to the Weil-Peterssen metric. This is done via shifts of finite type and thermodynamic formalism and, in particular, ergodic theorists should not be put off by the first two sentences in the abstract. (This is joint work with Mark Pollicott.)