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Automorphisms of seemed surfaces, modular operads and Galois actions

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The idea behind Grothendieck-Teichmüller theory is to study the absolute Galois group via its actions on (the collection of all) moduli spaces of genus curves. In practice, this is often done by studying an intermediate object: The Grothendieck-Teichmüller group, GT. In this talk, I'll describe an algebraic gadget built from simple decomposition data of Riemann surfaces. This gadget, called an infinity modular operad, provides a model for the collection of all moduli spaces of genus curves with boundaries, which we justify by showing that the automorphisms of this algebraic object is isomorphic to a subgroup of Grothendieck-Teichmüller group. This is joint work with L. Bonatto.

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