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Skinning maps and gluing problems for hyperbolic 3-manifolds

In the 1970’s Bill Thurston introduced a number of geometric and analytical tools for studying hyperbolic structures on 3-manifolds, and the ways in which these structures can be deformed and fitted together. Among these is his Skinning Map, a holomorphic map of Teichmüller spaces induced by the relationship between a hyperbolic 3-manifold and the covering spaces associated to its boundary. The properties of this map remain fascinating, and are relevant to improving our quantitative understanding of the interaction between topology and geometry in 3 dimensions. We will sketch some of this story, some open questions, some answers, and some work in progress.
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