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The holomorphic couch theorem

The only obstructions to moving a holomorphic couch in a holomorphic house are topological. More precisely, if two conformal embeddings between Riemann surfaces are homotopic, then they are homotopic through conformal embeddings. In other words, the space of all conformal embeddings in a given homotopy class is path-connected. The proof of this theorem uses several tools from Teichmüller theory such as quasiconformal maps, quadratic differentials, and extremal length.