

Representation varieties detect essential surfaces

Takahiro Kitayama

Extending Culler-Shalen theory, Hara and I presented a way to construct certain kinds of branched surfaces (possibly without any branch) in a 3-manifold from an ideal point of a curve in the SL_n -character variety. There exists an essential surface in some 3-manifold known to be not detected in the classical SL_2 -theory. We show that every essential surface in a 3-manifold is given by the ideal point of a line in the SL_n -character variety for some n . The talk is partially based on joint works with Stefan Friedl and Matthias Nagel, and also with Takashi Hara.