

Geometry/Topology Seminar

Counting components of moduli spaces with help from ChatGPT.

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Abstract: The moduli spaces in question are associated to a pair (S,G) where S is a closed surface and G is a real reductive Lie group. Depending on your point of view, the moduli spaces are either for G -Higgs bundles on the surface, or equivalently for G -representations of the fundamental group of the surface. In many cases these moduli spaces have multiple connected components. Some of the components - the so-called higher Teichmuller components - are known to have special geometric significance but a complete count of all components has yet to be accomplished. After a brief survey of the state-of-the-art I will describe some work in progress on completing the component count for cases where G is a non-compact real form of the exceptional Lie groups. This is joint work with Brian Collier, Oscar Garcia-Prada, Peter Gothen, and Andre Oliveira, and with crucial help at one point from ChatGPT in a way which I will describe.

Wednesday, November 15 at 3:00 PM in 636 SEO