

Markoff Surfaces in the p -adic World

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Markoff surfaces appear in studies of the character variety of the 1-punctured torus or the 4-punctured sphere, which have many algebraic automorphisms. When we sketch their real points, say, we often observe ‘hyperbolic’ and “spherical” parts. The dynamical nature of the algebraic automorphisms on these respective parts is well-known for real (or complex) points.

In the talk, we will discuss what happens when we ask an analogous question for p -adic numbers. It turns out that (a) the tropicalization of the variety gives rise to a copy of the hyperbolic plane, and (b) there is a finite list of bounded, automorphism-invariant closed subsets over p -adic points. These correspond to the behaviors of “hyperbolic” and “spherical” parts in the p -adic case.

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