KENNETH CHU, University of Texas at Austin

On the geometry of the moduli space of real binary octics

The moduli space of smooth real binary octics has five connected components, respectively parametrizing the real binary octics with $0, 1, \ldots, 4$ complex-conjugate pairs of roots. In this talk, we describe a hyperbolic structure on the GIT-stable completion of each component as an arithmetic quotient of real hyperbolic 5-space, following earlier work of Allcock–Carlson–Toledo on real cubic surfaces. We will also explain how to see that the Allcock–Carlson–Toledo construction of the moduli space of stable real binary octics fails to be a hyperbolic orbifold.