

Meeting: 1003, Atlanta, Georgia, SS 34A, AMS Special Session on Algorithmic Algebraic and Analytic Geometry, I

1003-14-587 **Bonnie Sakura Huggins*** (bhuggins@math.berkeley.edu). *Fields of moduli of hyperelliptic curves*. Preliminary report.

The field of moduli of a curve is, roughly speaking, the infimum of its fields of definition. Let X be a hyperelliptic curve defined over a field K of characteristic not equal to 2. Let $\text{Aut}(X)$ be the group of automorphisms of X defined over an algebraic closure of K and let ι be the hyperelliptic involution of X . We will present an overview of a proof that X can be defined over its field of moduli if $\text{Aut}(X)/\langle \iota \rangle$ is not cyclic. We will also give examples of hyperelliptic curves not definable over their field of moduli when $\text{Aut}(X)/\langle \iota \rangle$ is cyclic. (Received September 23, 2004)