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

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Computing Hurwitz spectra in arithmetic form. Preliminary report.

A Riemann surface having automorphism group of order $84(g-1)$ is called a Hurwitz surface. These surfaces are intimately connected to the 2,3,7-triangle group T acting by isometry on the hyperbolic plane. In recent work, a combinatorial algorithm was presented which allows the computation of the Hurwitz length spectra in floating-point form. This work has now been extended to allow exact computation of the spectra in arithmetic form. When the spectrum of T is viewed in this form, a number of intriguing patterns are observed. (Received August 11, 2004)