

1007-14-164

Anthony Weaver* (aweaver436@aol.com), 800 Riverside Drive, Apt. 6B, New York, NY 10032.

Exceptional points in the elliptic-hyperelliptic locus.

An elliptic-hyperelliptic (EH) Riemann surface is a two-sheeted covering of an elliptic curve. The EH locus in moduli space is a subvariety of complex dimension $2g - 2$. An exceptional point in moduli space is a unique surface class distinguished by the topological type of the action of the full automorphism group. We give a purely number theoretic condition on the genus which determines the number of exceptional points $e(\text{EH}, g)$ in the EH locus in genus g . $e(\text{EH}, g) = 0$ for infinitely many g , but it can also be arbitrarily large, with an upper bound that grows with the genus. (By contrast, for the hyperelliptic locus (H) it is known that $0 \leq e(\text{H}, g) \leq 5$, with $e(\text{H}, g) = 3$ for all $g > 30$.) When $e(\text{EH}, g) > 0$, we give explicit presentations, signatures, and generating triples which determine the topological type of the action of the full automorphism group of each exceptional point. (Received February 19, 2005)