

E. Previato, T. Shaska, G. S. Wijesiri, "Theta nulls of cyclic curves of small genus", Albanian J. Math. Vol.1, No. 4, 2007, 253-270.

Abstract:

We study relations among the classical thetanulls of cyclic curves, namely curves \mathcal{X} (of genus $g(\mathcal{X}) > 1$) with an automorphism σ such that σ generates a normal subgroup of the group G of automorphisms, and $g(\mathcal{X}/\langle\sigma\rangle) = 0$. Relations between thetanulls and branch points of the projection are the object of much classical work, especially for hyperelliptic curves, and of recent work, in the cyclic case. We determine the curves of genus 2 and 3 in the locus $\mathcal{M}g(G, C)$ for all G that have a normal subgroup $\langle\sigma\rangle$ as above, and all possible signatures C , via relations among their thetanulls.