

Elliptic subcovers of a genus two curve

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Abstract

Let C be a curve of genus 2 and let E be an elliptic curve such that there is a map $\phi : C \rightarrow E$ of degree n . Then this induces a map $\psi : \mathbb{P}^1 \rightarrow \mathbb{P}^1$. Under certain conditions, there exists an elliptic curve E' such that the jacobian of C is isogenous to the product $E \times E'$. We will discuss an algorithm for finding an appropriate curve, E' , for the cases of small odd degree.