

Grivaux, Julien; Velasquez, Juliana Restrepo; Rousseau, Erwan

On Lang's conjecture for some product-quotient surfaces. (English) Zbl 06991399

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Let $\rho: S \rightarrow (C_1 \times C_2)/G$ be the minimal resolution of the quotient surface $(C_1 \times C_2)/G$, where C_1 and C_2 are smooth projective curves of genus ≥ 2 , and G is a finite group, acting faithfully on each of them and diagonally on the product. In the paper under review, the authors prove effective versions of algebraic and analytic Lang's conjectures, which claim that curves of fixed genus on a surface of general type form a bounded family, for such product-quotient surfaces with $p_g = 0$ and $c_1^2 = c_2$.

Let E be the exceptional divisor of ρ . The authors obtain their result by proving that (i) if $f: C \rightarrow S$ is a holomorphic map with $f(C) \not\subseteq E$, where C is a smooth projective curve, then $\deg f^*(K_S - E) \leq 2(2g(C) - 2)$; (ii) if moreover $p_g(S) = 0$ and $K_S^2 = 6$ then the line bundle $K_S - E$ and the cotangent bundle of S are big.

Reviewer: Jin-Xing Cai (Beijing)

MSC:

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