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Siegel’s Theorem and the Shafarevich Conjecture. Preliminary report.

It is known that in the case of hyperelliptic curves the Shafarevich conjecture can be made effective, i.e., for any number field $k$ and any finite set of places $S$ of $k$, one can effectively compute the set of isomorphism classes of hyperelliptic curves over $k$ with good reduction outside $S$. We show that an extension of this result to an effective Shafarevich conjecture for Jacobians of hyperelliptic curves of genus $g$ would imply an effective version of Siegel’s theorem for integral points on hyperelliptic curves of genus $g$. (Received September 20, 2011)