
#### Abstract

Let $L$ be a number field and $\mathfrak{a}$ be an ideal of some order of $L$. Given an algebraic number $a \bmod \mathfrak{a}$ and some bounds we show how to effectively reconstruct a number $b$ such that $b$ is smaller then the given bound and $b \equiv a \bmod \mathfrak{a}$. The first application is an algorithm for the computation of $n$-th roots of algebraic numbers. Secondly, we get an algorithm to factor polynomials over number fields which generalises the Hensel-factoring method. Our method uses only integral LLL-reductions in contrast to the real LLLreduced suggested by $[6,8]$.


