Title: Effective results for hyper- and superelliptic equations over number fields

Author(s): Attila Bérczes, Jan-Hendrik Evertse and Kálmán Győry

Let f be a polynomial with coefficients in the ring O_S of S-integers of a given number field K, b a non-zero S-integer, and m an integer ≥ 2. Suppose that f has no multiple zeros. We consider the equation $(*)$ $f(x) = by^m$ in $x, y \in O_S$. In the present paper we give explicit upper bounds in terms of K, S, b, f, m for the heights of the solutions of $(*)$. Further, we give an explicit bound C in terms of K, S, b, f such that if $m > C$ then $(*)$ has only solutions with $y = 0$ or a root of unity. Our results are more detailed versions of work of Trelina, Brindza, and Shorey and Tijdeman. The results in the present paper are needed in a forthcoming paper of ours on Diophantine equations over integral domains which are finitely generated over $\mathbb{Z}$.

Address:
Attila Bérczes
Institute of Mathematics
University of Debrecen
H-4010 Debrecen, P.O. Box 12
Hungary

Address:
Jan-Hendrik Evertse
Universiteit Leiden
Mathematisch Instituut
Postbus 9512, 2300 RA Leiden
The Netherlands

Address:
Kálmán Győry
Institute of Mathematics
University of Debrecen
H-4010 Debrecen, P.O. Box 12
Hungary