Exact values of the function $\Gamma^*(k)$

Paulo Henrique de Azevedo Rodrigues (paulo.mat.ufg@gmail.com)
Universidade Federal de Goiás

Abstract. The function $\Gamma * (k)$ is defined to be the smallest number s such that a diagonal form of degree k in s variables with (rational) integer coefficients is guaranteed to have a nontrivial zero in the p-adic fields for all primes p. In this work, we find the exact value of $\Gamma * (k)$ many values of $k \leq 64$.