

Residue classes of prime factors and where to find them

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Abstract

We consider the following problem: given residues modulo p of all divisors of some squarefree number n , can we find efficiently small set of remainders containing all those which correspond to prime divisors? We present an algorithm which solves this problem for p and n satisfying some natural conditions and show that such numbers are abundant. The interesting feature of the proof is that it relies on additive combinatorics. We also give some application of this result to algorithmic number theory.