

GCD estimates in arithmetic and geometry

Pietro Corvaja (Università di Udine)

The following result was proved twenty years ago by Bugeaud, Zannier and the speaker: given two multiplicatively independent integers $1 < a < b$ and a positive real number ϵ , for all but finitely many exponents n ,

$$\gcd(a^n - 1, b^n - 1) < \exp(\epsilon n).$$

Analogous problems over function fields and entire functions led to a fertile area of research. We shall present a survey of these results and their applications to a variety of situations in geometry, arithmetic and complex analysis.