CASTS TALKS

The 7th East Asia Number Theory Conference

Asymptotic GCD

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Let a and b be multiplicatively independent positive integers. A fundamental question is to study the non-trivial upper bound for gcd (a - 1,b - 1) and the asymptotic behavior of the sequence gcd (a^n -1,b^n - 1). It is also interesting to study the gcd problem for two entire analytic functions, i.e. giving upper bounds for the counting function of their common zeros. Indeed, a lot more can be done in the complex case than the number field situation. In this talk, we will discuss the gcd of f^n-1 and g^n - 1 for sufficient large n where f and g are algebraically independent entire functions. The key ingredient of the proof follows from the recent developments of formulating the second main theorem of the Nevanlinna theory and Schmidt's subspace theorem for general divisors and an effort to establish a version of the second main theorem with truncated counting functions. This is a joint work with Ji Guo.