Online Number Theory Seminar

3 November 2023. – 14:00-14:50

Ari Shnidman : Quartic fields corresponding to binary quartic forms

A degree d homogeneous form $f(x, y)$ determines a ring of rank d over Z, the ring of functions on the scheme $\{(x, y) : f(x, y) = 0\}$. For $d < 4$, this construction recovers all rings of integers of number fields of degree d. For $d = 4$, we show that a positive proportion of quartic ring of integers do not arise this way. I'll motivate this question a bit and then explain the proof. This is joint work with Levent Alpoge and Manjul Bhargava.