

Oleg German, Can multiparametric geometry of numbers solve Oppenheim conjecture?

The Oppenheim conjecture for the product of linear forms claims that for $n \geq 3$ the product of n linearly independent homogeneous linear forms $L_1(\mathbf{x}), \dots, L_n(\mathbf{x})$ in n variables is bounded away from zero in nonzero integer points if and only if the lattice

$$\Lambda = \left\{ (L_1(\mathbf{x}), \dots, L_n(\mathbf{x})) \mid \mathbf{x} \in \mathbb{Z}^n \right\}$$

is diagonally equivalent to an algebraic one. This conjecture is known to imply the Littlewood conjecture.

The aim of the talk is to speculate on possible ways to construct a counterexample with the help of multiparametric.