

Per Salberger

Chalmers University of Technology

Heath-Brown's determinant method and Mumford's geometric invariant theory

Heath-Brown's p -adic determinant method is used to count rational points on hypersurfaces and was extended to subvarieties of codimension > 1 in projective space by Broberg and the author. The determinants that occur give rise to embeddings of Hilbert schemes in Grassmannians, which enables the use of techniques from geometric invariant theory. We describe some Diophantine applications and an unexpected link to the theory of Donaldson and Tian on Kähler metrics of constant scalar curvature.