

Gavin Brown

Unprojection constructions in commutative algebra and almost-toric geometry

TIME:

23 May 2006, 14:00 - 16:00

LOCATION:

FU-Berlin, Institut für Mathematik
Arnimallee 3, Rm. 210

Elimination of a variable is a standard construction of geometry and algebra. Unprojection is the inverse operation applied in very specific situations. I will review simple unprojection constructions and then describe joint work with Miles Reid to construct and classify 'key varieties' for the canonical covers of Mori flips. These varieties are almost-toric, being 6-dimensional with the action of a 4-dimensional algebraic torus. This has close relations with the recent work of Altmann, Hausen and others, although the details in this case are not yet understood. Our methods include beautiful combinatorial constructions involving toric geometry, continued fraction expansions and 'cascades of Pfaffians'.

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