THE UNIVERSITY  OF HONG KONG

Institute of Mathematical Research
Department of Mathematics

GEOMETRY SEMINAR

The length classification of simple threefold flops, matrix factorisations, and noncommutative algebras

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Abstract

Simple threefold flops in algebraic geometry were classified into 6 families by Katz and Morrison using the length invariant. A program to explicitly understand these families via matrix factorisations was conjectured by Curto and Morrison, and they proved that this program can be completed for the first two families.

I aim to recap these topics, and then to explain how Curto and Morrison's ideas can be translated into noncommutative algebra. In this setting there is a straightforward description of all the families, and both the matrix factorisation and geometric description can be recovered from this noncommutative algebra description. In particular, this allows examples occurring in all 6 families of flops to be constructed.

Date:	December 5, 2017 (Tuesday)
Time:	4:00 – 5:00pm
Venue:	Room 210, Run Run Shaw Bldg., HKU

All are welcome