



*Institute of Mathematical Research
Department of Mathematics*

COLLOQUIUM

Infinite gammoids

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Date: February 18, 2013 (Monday)

Time: 3:30 – 4:30pm

Venue: Room 210, Run Run Shaw Bldg., HKU

Abstract

Infinite matroids as traditionally defined are finitary, that is, a set is independent as soon as its finite subsets are. However, the essential feature of duality in finite matroid theory is no longer preserved. In 2010, Bruhn et al gave sets of concise axioms for infinite matroids which allow for duality. Since then infinite counterparts of many finite matroid theorems have been found.

Transversal matroids are particularly well studied matroids, because of close relation with optimization. They are generalized by gammoids which in turn form a class closed under matroid duality and minor. However, when the defining directed graph of a gammoid is allowed to be infinite, new phenomena arise. The prime one is that the linkages do not even always define a matroid.

There will be a gentle introduction to infinite matroids with examples. Then we will move towards a natural sufficient condition on a directed graph so that the linkages define a matroid.

All are welcome