THOMAS BRUESTLE, Bishops and Université de Sherbrooke, Québec, Canada
Cyclic cluster algebras of rank three

Cluster algebras, introduced by Fomin and Zelevinsky a few years ago, have gained a lot of interest by now. Acylic cluster algebras have been shown to be related to cluster categories and tilted algebras. Cyclic cluster algebras, however, are less well understood.

We consider the first non-trivial case, cluster algebras of rank three (square, coefficient-free), and study which of them are cyclic. Rank three cluster algebras are given by triples of integers (x, y, z), and we provide an answer which involves the hyperplanes defined by

$$x^2 + y^2 + z^2 - xyz = c.$$

This is joint work with Ibrahim Assem, Martin Blais and Lutz Hille.