

THE UNIVERSITY



OF HONG KONG

Department of Mathematics

Study seminar on cluster algebras

Recurrence formula, positivity and polytope basis in cluster algebras via Newton polytopes (Lecture 4)

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Abstract

In this series of several talks, we discuss totally sign-skew-symmetric cluster algebra of rank n . We study the Newton polytopes of F -polynomials and, more generally, a family of polytopes N_h indexed by vectors h in Z^n . We use it to give a proof of Laurent positivity and to construct what we call the polytope basis of the upper cluster algebra. The polytope basis consists of certain universally indecomposable Laurent polynomials. It is strongly positive and generalizes the greedy basis constructed by Lee-Li-Zelevinsky in rank 2. This is a report on joint work with Fang Li, cf. arXiv:2201.01440.

Date: October 6, 2022 (Thursday)

Time: 4:30 - 5:30pm

Venue: Room 320A, Run Run Shaw Bldg., HKU

All are welcome