

THE UNIVERSITY



OF HONG KONG

*Institute of Mathematical Research
Department of Mathematics*

Number Theory Seminar

Modular polynomials and Hecke points

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Abstract

Modular polynomials are integral polynomials that give a trivial integral model of the modular curves which parametrize elliptic curves and their cyclic subgroups. Rich arithmetic information is encoded into modular polynomials/curves. In this talk, I will introduce some necessary background and focus on the modular polynomials in the setting of Drinfeld modules which are the analogue of elliptic curves in function field. I will present an explicit and asymptotically optimal result on estimating the size of the coefficients of modular polynomials which can be regarded as a way to measure the size of the corresponding modular curves. As an application of our method, we derive some results on the averaged Weil heights and averaged Taguchi heights of Hecke points. This is joint work with Florian Breuer and Fabien Pazuki.

Date: November 11, 2024 (Monday)

Time: 4:30 – 5:30pm

Venue: Room 210, Run Run Shaw Building,
HKU

All are welcome