



Geometry Seminar

Matrix Positroid Varieties and Periodic Pipe Dreams

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Abstract

Last year [Fan-Guo-Su-Xiong] gave formulae, as sums over "periodic pipe dreams" that they introduced, that represent (nonuniquely) the fundamental and Chern-Schwartz-MacPherson classes of positroid varieties in Grassmannians. One might hope that the sums (and the individual pipe dreams) have well-defined geometric meaning, but the most obvious guess fails. Paul Zinn-Justin and I introduce "matrix positroid varieties", which involve a surprising twist by a diagonal matrix, and show that (1) the [FGSX] formula computes their classes on the nose and (2) this can be proven using a flat degeneration. Along the way I'll explain an old, but underappreciated, story of the geometry of CSM classes.

Date: September 1, 2026 (Tuesday)

Time: 4:00 pm – 5:00 pm

Venue: Room 210, Run Run Shaw
Building HKU

All are welcome