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Grobner bases for certain type C Kazhdan-Lusztig ideals

A Kazhdan-Lusztig variety is an intersection of a Schubert variety with an opposite Schubert cell in a flag variety. By a theorem of Kazhdan and Lusztig, it is essentially equivalent to study certain local questions on Schubert varieties by studying the corresponding questions on Kazhdan-Lusztig varieties.

Alexander Woo and Alexander Yong carried out a computational-algebraic study of Kazhdan-Lusztig varieties in type A. They produced Grobner bases for their defining ideals, obtained singularity results, and produced combinatorial formulas for their K-polynomials (equivariant K-classes).

After recalling some background, I will discuss work in progress with Laura Escobar, Alex Fink, and Alexander Woo on computational-algebraic properties of certain type C Kazhdan-Lusztig varieties.