

POSITIVITY OF PARABOLIC KAZHDAN-LUSZTIG POLYNOMIALS

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We give diagrammatic categorifications of the spherical and of the anti-spherical modules for any Coxeter group. Our main theorem gives a “light leaves” basis of morphisms in these categorifications. We deduce that all flavours of parabolic Kazhdan-Lusztig polynomials have positive coefficients (for arbitrary choices of subsets of simple reflections).

Joint work with Geordie Williamson (Max Planck Institut).