

# KL POLYNOMIALS OF MATROIDS

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ABSTRACT. The definition of Kazhdan-Lusztig (KL) polynomials of matroids by Elias, Proudfoot and Wakefield was motivated by algebraic geometry: for matroids realizable over a field, the polynomial  $P_M(t)$  is the Poincaré polynomial (in  $t^{1/2}$ ) of the local intersection cohomology of a singular algebraic variety obtained as a compactification of the associated hyperplane arrangement. I will survey some of what is known about these polynomials (and the related  $Z$ -polynomials), including nonnegativity of their coefficients, and formulas and chain complexes to compute the low degree coefficients, as well as conjectures about log-concavity and real-rootedness.

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