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General LLT polynomials

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Abstract

I'll report on *joint work with Grojnowski* in which we give a general definition of LLT polynomials associated to a reductive algebraic group G and Levi subgroup L, and prove that their coefficients are always positive. The case $G = \mathrm{GL}_n$ gives the classical LLT polynomials, including those for skew shapes, whose positivity was an open problem. The proof uses the geometric machinery of Kazhdan-Lusztig theory.