

# LLT polynomials and Hecke algebra traces

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Unicellular LLT polynomials are closely related to the chromatic quasisymmetric functions of incomparability graphs of unit interval orders via a plethystic substitution. Coefficients arising in various expansions of these chromatic quasisymmetric functions are known to be evaluations of Hecke algebra traces of Kazhdan–Lusztig elements. We view coefficients of the same expansions of unicellular LLT polynomials as evaluations of different *plethystically defined* traces at Kazhdan–Lusztig basis elements, and express these in terms of traditional trace bases. We also describe these new traces in terms of induction and Kazhdan–Lusztig  $R$ -polynomials.