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Why “Littelmann-type” in Allen Knutson’s “A Littelmann-type formula for Duistermaat-Heckman measures”

In his paper “A Littelmann-type formula for Duistermaat-Heckman measures” Allen Knutson proves a formula for the Duistermaat-Heckman measure associated to a symplectic manifold with a Hamiltonian torus action which consists only of positive terms. The positive terms are push-forwards of Lebesgue measures of certain simplices defined geometrically in terms of the symplectic structure and a Morse decomposition of the symplectic manifold. We will identify those geometrically defined simplices as the simplices defined combinatorially in Raika Dehy’s paper “Combinatorial Results on Demazure modules”. This will explain the expression “Littelmann-type” in the title of Knutson’s paper since Dehy’s combinatorially defined simplices are a topological description of Littelmann paths.