

1102-05-172

Michael Chmutov* (mchmutov@umich.edu). *Parallel transport in the Kazhdan-Lusztig W -graph and Green's 0 – 1 conjecture in Lie type B .*

In 1979 Kazhdan and Lusztig introduced for each Coxeter group a family of polynomials which have numerous deep applications in representation theory and geometry. While these polynomials are difficult to compute, they are not so difficult to recover from a certain weighted directed graph known as the Kazhdan-Lusztig W -graph. The vertices of this graph are the elements of the Coxeter group.

There was a long-standing conjecture, later disproved by McLarnan and Warrington, that in Lie type A , the weights of the edges are always 0 or 1. Green has proposed a weaker version of the conjecture that the same is true for edges starting at so-called fully-commutative elements of the Coxeter group. This conjecture may hold in the generality of all Coxeter groups. Green himself proved the conjecture in Lie types A and \tilde{A} in 2009. The proof in type D has been carried out by Gern in 2013. We prove the conjecture in type B . The main new ingredient of the proof is a certain relation among the edge weights which we refer to as “parallel transport.” (Received July 28, 2014)