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Dual graded graphs for Kac-Moody algebras. (English) Zbl 1200.05249
Algebra Number Theory 1, No. 4, 451-488 (2007).

Summary: Motivated by affine Schubert calculus, we construct a family of dual graded graphs (Γ_s, Γ_w) for an arbitrary Kac-Moody algebra g . The graded graphs have the Weyl group W of g as vertex set and are labeled versions of the strong and weak orders of W respectively. Using a construction of Lusztig for quivers with an admissible automorphism, we define folded insertion for a Kac-Moody algebra and obtain Sagan-Worley shifted insertion from Robinson-Schensted insertion as a special case. Drawing on work of Proctor and Stembridge, we analyze the induced subgraphs of (Γ_s, Γ_w) which are distributive posets.

MSC:

- 05E10 Combinatorial aspects of representation theory
- 57T15 Homology and cohomology of homogeneous spaces of Lie groups
- 17B67 Kac-Moody (super)algebras; extended affine Lie algebras; toroidal Lie algebras
- 57M15 Relations of low-dimensional topology with graph theory

Cited in **2** Reviews
Cited in **10** Documents

Keywords:

dual graded graphs; Robinson-Schensted insertion; Sagan-Worley insertion; affine insertion

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