Dual graded graphs arising from combinatorial Hopf algebras

Mark Shimozono
Department of Mathematics
Virginia Tech
460 McBryde Hall
Blacksburg, VA 24061-0123
USA
mshimo@math.vt.edu

Abstract

Dual graded graphs are Fomin’s generalization of Stanley’s differential posets; they formalize conditions under which one may obtain Schensted-type bijections and the associated enumerative identities. We observe that under some mild assumptions, combinatorial Hopf algebras naturally give rise to dual graded graphs. We give examples from symmetric functions, Kac-Moody Schubert calculus, and quasisymmetric functions.

This is joint with Thomas Lam.