

1046-05-746

Hillary Einziger* (hillaryre@gmail.com). *A forest formula for the antipode in incidence Hopf algebras.*

Incidence Hopf algebras can be defined from hereditary families of lattices. The antipode in these Hopf algebras can be computed by summing over all chains of a lattice. We define “forests” of lattices such that there is a surjection from the set of chains of a lattice to the lattice’s set of forests, and we define a new formula for the antipode based on summing over these forests. Both Figueroa’s (2005) formula for the antipode in the Hopf algebra of distributive lattices and Haiman and Schmitt’s (1987) formula for the antipode in the Faa di Bruno Hopf algebra can be seen as examples of this new formula. (Received September 11, 2008)