

1154-06-1307 **Richard Ehrenborg** and **Alex Happ*** (ahapp@cbu.edu). *The antipode of the noncrossing partition lattice.*

The antipode of the reduced incidence Hopf algebra of posets is an extension of the Möbius function of a poset. However, very few posets have had their antipode determined in an explicit form. Haiman and Schmitt computed the antipode of the partition lattice, and Einziger in her dissertation computed the antipode of the noncrossing partition lattice in terms of polygon dissections where each region has an even number of sides. These dissections are in bijective correspondence with noncrossing hypertrees.

We present here a different approach to the antipode of the noncrossing partition lattice directly in terms of noncrossing hypertrees. The proof is based on a map from chains in the noncrossing partition lattice to noncrossing hypertrees and expressing the alternating sum over these fibers as an Euler characteristic. (Received September 14, 2019)