N Bradley Fox* (foxb@apsu.edu). A Lattice Path Interpretation of the Diamond Product.

The diamond product is a poset operation that corresponds to the Cartesian product of polytopes. Through the use of coproducts, recursive formulas have been developed to study the resulting $cd$-index, a polynomial which contains data on chains within posets, of the diamond product of two Eulerian posets. This talk introduces a combinatorial interpretation for the diamond product of two $cd$-monomials that involves a weighted sum of lattice paths. (Received September 11, 2015)