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*Lattice path matroids and polymatroids.*

Lattice path matroids are a special type of transversal matroids whose bases are in correspondence with planar lattice paths. We discuss some interesting enumerative properties of the h-vectors of these matroids. We then show how such matroids are naturally related to discrete polymatroids, monomial order ideals which generalize classical matroid theory to multisets. Finally, we suggest several generalizations to larger classes of matroids. (Received January 26, 2010)