

## Inversions in 312-permutations

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### ABSTRACT.

We introduce an inversion diagram and use it to describe a simple bijection between 312-avoiding permutations and Dyck paths that sends inversion statistic to area statistic. We define Tamari and Dyck lattice using inversion tables. Our unified approach allows to understand the connections between these lattices better. We present a simple bijection between pairs of 312-avoiding permutations and perfect matchings of ordered graphs that avoid the pattern  $abccab$ .

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