

1145-05-1449

Tri Lai* (tlai3@unl.edu), 8110 S 20th Street, Lincoln, NE 68512. *New duals of MacMahon's theorem.*

The enumeration of tilings dates back to the early 1900s when MacMahon proved his classical theorem on boxed plane partitions. The theorem yields an elegant product formula for the number of lozenge tilings of a hexagon on the triangular lattice. Ciucu and Krattenthaler recently found a striking asymptotic pattern of tiling number of hexagons with holes, called a ‘dual’ of MacMahon’s theorem. In this talk, we investigate several new duals of MacMahon’s theorem. We also present q -analogs of these results, which enumerate the corresponding plane-partitions-like structures by their volume. (Received September 22, 2018)