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Double Aztec Rectangles.

We investigate the connection between lozenge tilings and domino tilings by introducing the “*double Aztec rectangles*”, a new family of regions obtained by attaching two different Aztec rectangles.

We prove a simple product formula for the generating function of domino tilings of a double Aztec rectangle, which involves the statistics as in the Aztec diamond theorem by Elkies, Kuperberg, Larsen, and Propp. Moreover, we consider the connection between the generating function and MacMahon’s q -enumeration of plane partitions fitting in a given box. (Received February 18, 2016)