

Perfect t-embeddings of Hexagon

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A new type of graph embedding called a (perfect) t-embedding, was recently introduced and used to prove the convergence of dimer model height fluctuations to a Gaussian Free Field (GFF) in a naturally associated metric, under certain technical assumptions. We will describe a construction of perfect t-embeddings for regular hexagons of the hexagonal lattice and discuss their properties. The construction provides the first example, and hence proves the existence of perfect-t-embeddings for graphs with an outer face of a degree greater than four. As a consequence, this construction leads to a new proof of GFF fluctuations for the dimer model height function on uniformly weighted hexagon.

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