

# Fully packed loop configurations and non-intersecting lattice paths

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We consider fully packed loop configurations on a square grid with certain boundary conditions. These configurations are in bijection with several other fascinating objects from statistical physics and combinatorics, most notably configurations of the six vertex model and alternating sign matrices. I shall show that, under specific boundary conditions, fully packed loop configurations are also in bijection with certain families of non-intersecting lattice paths. This observation leads to a proof of several conjectures of Jean-Bernard Zuber on the number of such configurations. This is joint work with Fabrizio Caselli, Bodo Lass and Philippe Nadeau.