

# **Combinatorics of Discrete Lattice Models**

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The past 20 years have seen a period of constantly increasing, fruitful interaction between (enumerative) combinatorialists and (statistical) physicists. This interaction has been and is taking place particularly in connection with discrete lattice models, and it is manifest in results from combinatorics being used in statistical physics, methods from physics being used to solve combinatorial problems, and culminates (if I may say so) in combinatorialists dealing with (and solving) physics problems and in physicists proving conjectures in combinatorics.

In this talk, I shall make a personal selection of lattice models - the dimer model, alternating sign matrices/fully packed loop configurations, and map models - and use them to demonstrate the beauty of combinatorial methods (whatever that means ...) and to highlight their role in the analysis of discrete lattice models.