

# Dimers and tensor networks

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Associated to a  $GL_n$ -local system on a graph on a surface is a combinatorial formula enumerating traces of  $n$ -webs in the graph, in terms of a determinant of an associated matrix, the Kasteleyn matrix. We explain this formula and show how, for  $SL_2$  and  $SL_3$ , it can be used to enumerate webs of given topological types, in the case of graphs in simple surfaces. This is based on joint work with Dan Douglas, Nick Ovenhouse, and Haolin Shi.

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