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【803】 The triangular-lattice, Ising antiferromagnet with dipolar interactions: tuning a classical spin liquid

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We study theoretically the triangular-lattice, Ising antiferromagnet with long-range dipolar interactions, inspired by its realisation in nano-magnet arrays. We show that a classical spin-liquid regime exists above a low-temperature ordered phase, and explore how the nature of the spin liquid can be altered by a small lattice deformation. Deforming the lattice also tunes the nature of the transition from first order to Kasteleyn, via an unusual tricritical point. We show that the behaviour can be naturally explained in terms of a set of interacting strings, and this leads to an analogy with 1D quantum systems of spinless fermions.

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