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## **【819】 Phase diagram of dipolar-coupled XY moments on disordered square lattices**

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Frustration denotes that not all interactions can simultaneously be satisfied. In many frustrated magnetic systems, dipolar interactions are of great importance. The dipolar interaction is often intrinsically frustrated due to its inherent anisotropy. Because of this anisotropy, an arrangement of in-plane dipoles on a square lattice is known to exhibit an order-by-disorder transition to a low temperature long-range ordered phase. Using parallel tempering Monte Carlo simulations and newly developed order parameters, we study how either dilution disorder or randomly-displacing sites affects this order. The resulting phase diagrams reveal many similarities between the two types of disorder and can be understood by magnetic flux closure.

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