

Abstract Submitted
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Path Integral Approach to Geometrically Frustrated Quantum Antiferromagnets¹ MIRACULOUS BHASEEN, University of Cambridge, JOHN CHALKER, University of Oxford — We develop a path integral approach to geometrically frustrated quantum antiferromagnets. Using Hubbard–Stratonovich transformations to decouple the interactions within clusters of spins, we establish a high temperature expansion of the quantum partition function. This semiclassical approach based on conjugate cluster variables allows us to descend below the Curie–Weiss temperature scale, and to describe the emergent spin liquid regime. We make contact with complementary approaches based on spin wave theory.

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