

Abstract Submitted
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Gapless fractionalized vortex liquids in frustrated quantum antiferromagnets CHONG WANG, SENTHIL TODADRI, MIT — The standard theoretical approach to gapless spin liquid phases of two-dimensional frustrated quantum antiferromagnets invokes the concept of fermionic slave particles into which the spin fractionalizes. As an alternate we explore new kinds of gapless spin liquid phases in frustrated quantum magnets with XY anisotropy where the vortex of the spin fractionalizes into gapless itinerant fermions. The resulting gapless fractionalized vortex liquid phases are studied within a slave particle framework that is dual to the usual one. We demonstrate the stability of some such phases and describe their properties.

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