

Abstract Submitted  
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**Stability of the U(1) spin liquid with spinon Fermi surface in 2+1 dimensions**<sup>1</sup> SUNG-SIK LEE, McMaster University — We study non-perturbative stability of a 2+1 dimensional critical spin liquid state, the U(1) spin liquid with a spinon Fermi surface. By mapping the spinon Fermi surface into an infinite set of 1+1 dimensional chiral fermions, we show that an instanton has an infinite scaling dimension for any nonzero N, where N is the number of spinon flavors. Therefore, the spin liquid state can be stable against confinement in physical systems, such as spin 1/2 magnets on the triangular lattice.

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