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Title: Exact Quantum Spin Liquids with Emergent Fermi Surfaces and Fermi Arcs

Strong quantum fluctuations, encouraged by frustrating interactions among spins and low dimensionality could generate novel quantum spin liquid states. Existence of quantum spin liquids was proposed by Anderson in early 70's. This issue surfaced again with the advent of the RVB theory of superconductivity of cuprates. Here, a quantum spin liquid state containing resonating valence bond (RVB) state of a Mott insulator provided a basis for high T_c superconductivity that emerged on doping. The 'neutral spins' or spinon excitation was suggested to have a pseudo fermi surface based on general arguments and RVB mean field theory. Kitaev has constructed a frustrated spin model, where an RVB type mean field theory gives exact result. We present our recent exact result of how the long sought after pseudo fermi surface can arise under certain conditions. We will also show how the pseudo fermi surface splits into 'Fermi arcs'.