

# Possible Fermi liquid in the lightly doped Kitaev spin liquid

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The Kitaev spin liquid has been becoming potentially realizable in the strong spin-orbit coupling magnets and provides us the opportunity to test the physics of the doped spin liquid. We propose that the lightly doped Kitaev spin liquid (LDKSL) is the Fermi liquid. The low energy quasiparticles are well-defined and the Fermi sea has the quantized volume determined by the Luttinger's theorem. The LDKSL has the topological Kitaev spin liquid surrounding the Fermi sea. It violates the Wiedemann-Franz law and has a large Wilson ratio. The connection between the LDKSL and the pseudogap state in high- $T_c$  cuprates is also discussed.