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**Universal Symmetry-Protected Resonances in a Spinful Luttinger Liquid** YICHEN HU, CHARLES KANE, Univ of Pennsylvania — We study the problem of resonant tunneling through a quantum dot in a spinful Luttinger liquid. It provides the simplest example of a (0+1)d system with symmetry-protected topological phases. Transitions between different symmetry-protected topological phases separated by fixed points are achieved by tuning the system through resonance. For a particular interaction strength (Luttinger parameter $g_\rho = \frac{1}{3}$, $g_\sigma = 1$), we show that the problem is equivalent to a two channel $SU(3)$ Kondo problem. Both problems can be mapped to a quantum Brownian motion model on a Kagome lattice, which in turn is related to quantum Brownian motion on a honeycomb lattice and the three channel $SU(2)$ Kondo problem. Utilizing boundary conformal field theory, we find the universal peak conductance $g^* \frac{e^2}{h}$ as well as dimensions of the leading relevant operators of the problem. This allows us to compute the scaling behavior of the resonance line-shape as a function of temperature. We also established the fact that the fixed point quantum Brownian motion on both generalized honeycomb lattice($SU(2)_k$ Kondo) and generalized Kagome lattice($SU(k)_2$ Kondo) flow into are the same (with $k = 3$ our original resonant tunneling problem).

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