Hamiltonian RG flow equation

H flow eqn.

$$\Delta H_{(j)} = \sum_{l=1}^{2n_j}\{c^{\dagger}_{j,l}Tr_{j,l}(H_{(j)}c_{j,l}), \eta_{j,l}\}$$

ignored higher order correlated tangential scattering

Kondo coupling flow

no. of states on F

(n(0))

$$\frac{\Delta J^{(j)}(\omega)}{\Delta \log \frac{\Lambda j}{\Lambda_0}} = \frac{n_j (J^{(j)})^2 \left[(\omega - \frac{\hbar v_F \Lambda_j}{2})\right]}{(\omega - \frac{\hbar v_F \Lambda_j}{2})^2 - \frac{\left(J^{(j)}\right)^2}{16}} \Rightarrow \frac{dK}{d \log \frac{\Lambda}{\Lambda_0}} = \frac{n(0) K^2}{1 - \frac{K^2}{16}}$$

continuum RG flow eqn.

no. of e states on the shell

$$K^{(j)} = \frac{J^{(j)}}{\omega - \frac{\hbar v_F}{2}\Lambda_j}$$ (dimensionless coupling)

condition: $\omega > \frac{\hbar v_F}{2}\Lambda_0$