Problem Set - 04

24/04/2020

1. Choose the spectral function, $J(\omega) = \eta\omega^n \frac{\Lambda^2}{\Lambda^2+\omega^{n+1}}$, with $n > 1$. Repeat the derivation of the effective equation of motion for the Q oscillator in the Caldeira-Leggett model till order $\mathcal{O}(1/\Lambda^2)$.

2. Establish that the $-i\epsilon$ choice with $\epsilon > 0$, in the self-energy, $\Pi(\omega)$ leads to the anti-causal Greens function.