Coleman Lecture 9: Model II - time independent "charge"

December-16-11
12:19 PM

Q&A to 10:45.

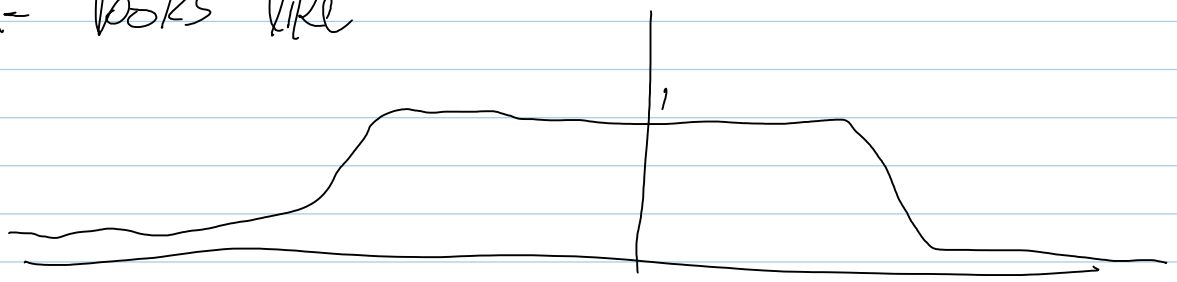
$$F(\vec{k}) = \frac{-ig}{(2\pi)^{3/2}\sqrt{2\omega_k}} \int (\ldots)$$

... Computation of the mean energy & momentum in model I

Model II. ρ is time independent

$$\mathcal{L}_I = F(t) g \rho(\vec{x}) \phi$$

where F looks like



(adiabatic on/off)

.... even the vacuum energy changes....

---- switch to counter-term

$$\mathcal{L}_I = \int F(t) g(t) \rho \phi - a \int f(t)$$

31:57

Continued Dec 20, 2011:

... The S-matrix comes out to be 1 !

... The energy comes out similar to "electrostatics", with Yukawa coupling: $\sim \frac{e^{-\alpha r}}{r}$