

Homework 4, Phys 230A, String Theory, Polchinski

Due 2/22/12.

1. a) Find the open string amplitude for one tachyon and two massless vectors. Show that it is nonvanishing even without Chan-Paton degrees of freedom, and also give the form with Chan-Paton wavefunctions included.
b) Find a gauge invariant Lagrangian that produces such an amplitude.

Just the one assigned problem, but also a suggestion for the long weekend: derive the open string amplitude 11.31. Check that its first few asymptotics at large t are of the expected form. Now use the modular transformation 11.15 to obtain the first few asymptotics at small t : try to interpret them. In class next Weds. I will go through this and explain its significance.