

PHYSICS 489Y - Problem Set #5  
Out 20<sup>th</sup> Nov - Due 6<sup>th</sup> December

Do the two problems below. 2) is pretty qualitative. Read section 14.5 in the text. Then do the following problems taken out of the text book; 14.1, 14.3, 14.8, 14.14, 15.1, 15.2, 15.3

1) Show that Maxwell's equations are invariant under time reversal.

2) a) Assume  $K^0$  and  $\bar{K}^0$  beams of equal energy pass through a slab of matter. Will the beams be attenuated equally? If not, why?

b) A pure  $K_2^0$  beam passes through a slab of matter. Will the emerging beam still be a pure  $K_2^0$  beam? Explain.

c) How can you determine experimentally if the  $K_2^0$  is still pure after passage through the slab of matter?