

Particle Physics Seminar #3

Textbook: Griffiths - Introduction to Elementary Particles

Website: (all notes referred to below are on web site)

http://chaos.swarthmore.edu/courses/Phys093_2009/index.html

Readings:

REQUIRED: Griffiths - Chapter - 4
01_Ch19_2ndQuant - 2nd Quantization

Find readings that you like from:

GroupTheoryA0
GroupTheoryA1
GroupTheoryB0
GroupTheoryC0
Lie
Lie_Stuff
LPSQFT
Cons_Laws_Symm

My lectures on group theory will come from various parts of these documents.

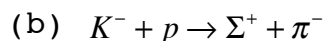
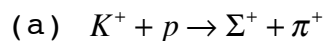
Topic: Symmetries and Group Theory

Professor Lecture Topic(s): Group Theory

Problems:

Griffiths 4-23 Spin 1
4-28 Pion-Nucleon stuff
4-29 Cross-section ratios
4-30 Total isospins
4-32 How many?
4-35 Neutrino
4-39 Heart on left side

Extra Problem 6 - What are the total possible isospins for the following reactions:



Find the ratio of the two cross-sections, assuming that either one or the other isospin channel dominates.

Extra Problem 7 - Explain why a $\rho^0(770)$ particle decays strongly into two pions but not three pions. What is the ratio of the decay into $\pi^0\pi^0$ to the decay into $\pi^+\pi^-$?