

PHYS 3446 – Lecture #18

Wednesday, Nov. 8, 2006

Dr. **Jae** Yu

1. Symmetries

- Why do we care about the symmetry?
- Symmetry in Lagrangian formalism
- Symmetries in quantum mechanical system
- Isospin symmetry
- Local gauge symmetry



Announcements

- No lecture next Monday, Nov. 13 but SH105 is reserved for your discussions concerning the projects
- Quiz next Wednesday, Nov. 15 in class
- 2nd term exam
 - Wednesday, Nov. 22
 - Covers: Ch 4 – whatever we finish on Nov. 20
- Reading assignments
 - 10.3 and 10.4



Quantum Numbers

- We've learned about various newly introduced quantum numbers as a patch work to explain experimental observations
 - Lepton numbers
 - Baryon numbers
 - Isospin
 - Strangeness
- Some of these numbers are conserved in certain situation but not in others
 - Very frustrating indeed....
- These are due to lack of quantitative description by an elegant theory

