

Discussion March 3, 2010: Nuclear Lunch Seminar

An Experimental Overview of Gluonic Mesons

1. What is G-parity? Why has the π three charge states, whereas the η and η' only one? (2Q)
(Dilu)
2. What is a glue-ball? What is the difference between a meson and a glue-ball? (e.g. what are the differences between the $\pi^{\pm,0}$ and ρ mesons and gluons?) Is a glue-ball only an intermediate state? (4Q)
(Anton)
3. How can glue balls decay into mesons, when there are only gluons and no quarks?
(Anthony)
4. Why is the combination 1^{++} forbidden for glue-balls, and not the 3^{++} . How can one calculate and see that?
(Youngshin)
5. How are the masses for the various J^{PC} states found, and how are they identified?
(Daniel)
6. What is the difference between a radial excitation state and an exotic state? What makes a state exotic? How does its J^{PC} violate the quark model predictions? (3Q)
(Harsha)
7. How does one detect exotics if their J^{PC} is not within the quark model: How does one know they are there?
(Paul)
8. What is the BES experiment?
(Cody)
9. Why were there only the three instances in which "glue balls" are expected?
(Chen)
10. What is meant by 'quark rich' and 'quark poor'?
(Bing)
11. If the experimental values do not agree with the theoretical calculations, are there theoretical attempts to construct a new model that can describe the data?
(Nowo)