

# Nuclear Lunch Questions

## Measurement of interaction between antiprotons

Oct 14th and 21st 2015

1. What is H.B.T. and how was it originally used? (**Sushil**)
2. What is a singlet (triplet)? Why is the S-wave  $f_0$  for proton-neutron (triplet) negative? (**Shamim**)
3. What is the heaviest antiparticle observed to date? (**Mamun**)
4. How does one explain differences in values of  $f_0$  and  $d_0$  for antiprotons vs. nn or np? (**Mongi**)
5. How are particles differentiated (proton vs antiproton) at STAR? What is PID? (**Bishnu**)
6. Has there been any evidence to support the idea that antiproton-antiproton correlations would be different from proton-proton? (**Arbin**)
7. In Fig. 4 why are the error bars for  $d_0$  larger than those of  $f_0$ ? (**Rekam**)
8. How does one modify effective range expansion to include Coulomb interactions? (**Linda**)
9. What is meant by “freeze out“? (**Som**)
10. What is the difference between statistical and systematic errors? (**Douglas**)
11. What is the difference between STAR and PHENIX? (**Nadyah**)
12. What is Lednicky and Lyubashitz analytical model? (**Andrea**)
13. How is the proton-proton interaction different from the proton-antiproton interaction? (**Tyler**)
14. Can we say that this experiment proves that the residual interaction of a 3-quark bound state is the same as a 3-antiquark state? (**Sudhanva**)