

## Discussion April 28, 2010: Nuclear Lunch Seminar

*Measurement of the n-p elastic scattering angular distribution at  $E_n=10^2\text{MeV}$  by N. Boukharouba, F. B. Bateman, C. E. Brient, A. D. Carlson, S. M. Grimes, R. C. Haight, T. N. Massey, and O. A. Wasson, Phys. Rev. C 65, 014004 (2001)*

### Questions stimulated by the paper:

1. Why was  $\text{CH}_2$  used as a target? (Bijaya)
2. What is a  $\chi^2$  test? How to compute it? (Shamin)
3. The paper states "the Ohio University Accelerator offers a strong source of neutrons at 10 MeV", why / how? (Dilu)
4. What is the difference between the  $\Delta E - E$  channel and  $E - \text{TOF}$  channel used to select the legitimate recoil protons? How does the  $\Delta E - E$  works, why measure  $\Delta E$  and  $E$ ? (Nowo)
5. For this measurement would it be more useful to measure the coincidence "n-p" rather than the neutron or the proton? Why not use this solution? (Bing)
6. What are the isoscalar and isovector components of the N-N interaction? (Ken)
7. How to explain the main features of angular distribution of the H(n,n) cross-section? (Azamat)
8. Why should the nuclear data file updated? Is there any purpose to this measurement beside updating nuclear data files? (Sushil)
9. What, if any, are the differences between the different models predicting the angular distribution of the n-p scattering ? (Anton)
10. Why is it difficult to measure the recoil proton energy over a wide range of angles? (Harsha)
11. What is the difference between the "slow" and "fast" data acquisition system? (Youngshin)
12. Is the relation between the angle in the lab frame and the CM frame the same for relativistic and non-relativistic cases?
13. What are finite size corrections to the cross-section? (Shloka)
14. What was the energy range of the beam? Was it chosen for some physical reason or due to some equipment restriction? (Cody)