

Questions from October 26 Nuclear Lunch Presentation

1. How do we know the shape of the nuclei; particularly that ${}^7\text{Li}$ has an oblate shape?

Linda

2. How do we interpret a spectroscopic quadrupole moment? How is it related to the nuclear spin? Do all nonzero spin nuclei have a quadrupole moment?

Hao

3. What is the shape effect model? Where does Equation 5,

$$\sigma(P, \theta) = \sigma(\theta) [1 + A(\theta) P_2 \hat{\mathbf{P}} \cdot \hat{\mathbf{r}}_0] ,$$

come from; i.e. what are its physics content and assumptions?

Youngshin

4. What are tensor analyzing powers? How are these measured in the experiment?

Nowo

5. What does it mean “aligning the beam”? How was the beam aligned?

Bijaya

6. What is the difference between polarized, aligned, and unpolarized beams? Was the beam polarized or aligned? How do we relate the spectroscopic quadrupole moment to the alignment of the beam?

Mongi

7. How does the zero-degree polarimeter work (Fig. 2)?

Cody

8. What is the reaction of interest in this experiment? Are there any other reactions which could result in similar detector responses? How might they effect the conclusions of the experiment?

Harsha

9. What are ΔE - E telescopes? Why were they used at high energy? How do they help?

Bing