

# Using Inertial Fusion Implosions to Measure the T+<sup>3</sup>He Fusion Cross Section at Nucleosynthesis-Relevant Energies

A.B. Zylstra et al.

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1. What is the  $S$ -factor? What physical information does it tell us? What is its significance? In this paper, what is the difference between  $S_D$  and  $S_a$ ? [**Sudhanva**]
2. What is the  $R$ -Matrix and what are the inputs and outputs? [**Tyler**]
3. Why is this specific method for the experiment used? Or, in other words, why was this experiment not done using an accelerator? [**Taya**]
4. Is figure 3 data or just a calculation? On the same figure, why do the peaks have a width instead of being just a delta function? [**Bishnu**]
5. About the gas Cherenkov detector, what drives the choice of gas and why is the pressure of the gas an important parameter? Also, how can one change the number of detected Cherenkov photons? [**Abinash**]
6. How is OMEGA different from NIF? Have similar experiments been done at NIF? [**Andrea**]
7. What is the reason to use T(<sup>3</sup>He,D)<sup>6</sup>Li over <sup>4</sup>He(D, $\gamma$ )<sup>6</sup>Li and Where did they (or can we) get Tritium (T) from? [**Shiv**]
8. Is there any reason to choose 30:70 atomic mixture of T<sub>2</sub>:<sup>3</sup>He gas to fill the microballoon? Also, was the deuteron measured from the T(<sup>3</sup>He,D)<sup>4</sup>He reaction? [**Mamun**]
9. How did Madsen and Boyd come up with the upper limits in figure 4? [**Som**]
10. What is the difference between a differential and a total cross section? Given a differential cross section, can you calculate the total cross section? If so, how? Otherwise why not? This experiment only measure the  $\gamma$ s at one angle – is this sufficient? [**Rekam**]
11. Since the <sup>6</sup>Li problems hasn't been solved, what are other proposed solutions? [**Gula**]