

[Quiz 2] Academic Writing: Case Study

1. Please finish the assignment about "Build Your Arguments" (page 54, lesson_2.pdf).

Case1: Explicitly tell your reader what the connections are between sources.

Case2: Explicitly tell your reader what the connections are between those sources and your main assertion.

Case3: Use language to show your strong agreement/disagreement/cautious agreement with sources

Case4: Unattributed (not referenced) assertion at the start of paragraphs followed by evidence.

Case5: Include "so what" summary sentences (evaluative sentences) at the end of paragraphs.

2. Given the following words, please choose the comparably formal one from the pairs.

enquire, inform, receive, damage, utilize, however, verify, assist, reside.

3. Please recommend an academic paper in your field and answer the following questions.

Zihuai Zhang, Geng Chen, Xiaoye Xu et al. Ultrasensitive biased weak measurement for longitudinal phase estimation[J]. Physical Review A, 2016,94:053843

- (1) Please list the structure of the recommended paper (such as Introduction - Related Work - Method - Experiments - Discussion - Conclusion). Does this paper follow the hamburger-like structure?

Introduction-Bias phase and CDI effect(method and anaysis) - Comparison of two scheme(Experiments and comparison with related work) - Discussion - Conclusion.

Yes.

- (2) Please give a case of how the evidence is incorporated in this paper?

Firstly, theoretical analysis shows that the sensitivity is increased due to the appearance of CDI; Secondly, this conclusion is verified by simulation; Finally, the conclusion is further shown through experiments. The case is below.

In contrast, an extra bias phase can induce a frequency-dependent reshaping; especially when $\epsilon > 0$ there is always a small β_s satisfying $\omega_0\beta_s - \epsilon \approx 0$, so that destructive interference can be observed around β_s .

- (3) Please write an abstract of this paper in your own words.

Standard weak measurement (SWM) can measure small longitudinal phase changes (LPC) in a high sensitivity by measuring the shift of the spectrum shift through orthogonal pre-selection and post-selection state. In this paper, a bias phase is introduced in the pre-coupling process of the SWM and it can improve the measurement

sensitivity of LPC. Conjugated destructive interference (CDI) can be observed in the time domain and frequency domain through post-selection. Using a broadband source, CDI can be observed in a regime less than 1as , where the spectrum shift can reach several hundreds of THz and that is two orders of magnitude higher than the SWM.