

Homework Assignment #1, Evaluating Titles

This assignment consists of the **four** components enumerated below; make sure you submit something for each component.

To begin, go to <http://arxiv.org> and read the “General Information” page (find the link near the bottom of the screen in the “About arXiv” section). Poke around a bit on the website and get familiar with it if you’ve not used it before. Because of the delay in getting papers published in the peer-reviewed literature, physicists often post a “preprint” on arXiv to get results out to the community sooner.

Caveat lector! The papers posted to arXiv have not been peer reviewed or vetted in any way; *anybody* can post *anything* to arXiv. For example, look up 0909.3189 and note the arXiv administrator’s comments:

The screenshot shows the arXiv page for the article "Schrödinger equation of general potential" by Xiang-Yao Wu, Xiao-Jing Liu, Yi-Heng Wu, Qing-Cai Wang, and Yan Wang. The article is submitted on 17 Sep 2009 (v1) and last revised on 1 Dec 2012 (this version, v2). The abstract states: "It is well known that the Schrödinger equation is only suitable for the particle in common potential $V(\vec{r}, t)$. In this paper, a general Quantum Mechanics is proposed, where the Lagrangian is the general form. The new quantum wave equation can describe the particle which is in general potential $V(\vec{r}, \vec{r}, t)$. We think these new quantum wave equations can be applied in many fields." The comments section contains a yellow highlight: "arXiv admin note: substantial text overlap with arXiv:0909.2995, and text overlap with arXiv:0711.3544 by other authors without attribution". The subjects are listed as "Quantum Physics (quant-ph)". The journal reference is "International Journal of Modern Physics B, Vol. 25, No. 15, (2011), 2009-2017". The DOI is 10.1142/S0217979211000610. The citation information is "arXiv:0909.3189 [quant-ph]" or "arXiv:0909.3189v2 [quant-ph] for this version". The submission history shows two versions: v1 on 17 Sep 2009 and v2 on 1 Dec 2012.

As an experiment, type <substantial text overlap without attribution> (without the brackets) in the “Search or Article ID” box in the upper right corner of the screen and see what happens.

The screenshot shows the arXiv search bar with the text "substantial text overlap without attribution" entered. A red arrow points from the search bar to the search bar in the previous screenshot.

(Hint: Look for the **comments** line immediately below the authors’ names in the results.) In particular, note the commentary for arXiv:1406:3922, “Personalized Medical Treatments Using Novel Reinforcement Learning Algorithms.” Make a mental note of this feature of arXiv for our discussion later in the semester on plagiarism and the proper referencing of others’ work.

Next, go to the **Physics** section on the main page, select a subfield that you’re interested in, and click on the **recent** link (in parentheses to the right of the section name). Scan down the list of titles that appear on the next screen.

1. Select one paper that you think has a particularly good title, and one that you think has a particularly bad title, based on our class discussions. In making your selections, glance

over the papers and read at a minimum the abstract and the conclusions section to see how well (or poorly) the title reflects the contents of the paper. Write down the full bibliographic citation for each paper (author names, title, arXiv ID number, date submitted). Be sure you clearly identify which is the “good” title and which is the “bad” title.

2. Write a \approx^\dagger 300-word evaluation of *each* title (\approx 600 words total for the assignment). Justify why you assigned the “good title” and “bad title” designations to your two choices. (300 words = \approx 2–3 paragraphs)
3. Suggest a revised title for the paper whose title you found inadequate and *explain why you think your title is better*.
4. Email your completed assignment to phys496@physics.illinois.edu by **Friday, September 7, 9 p.m.** Assignments submitted after the deadline will be downgraded and will be ineligible for rewrite points.

Total—50 points

†Technical writing lesson of the day: The \sim symbol does *not* mean “approximately equal to”; it means “asymptotically equal to” or “of the order of magnitude of.” If you really mean “approximately equal to,” use \approx .