Term paper instructions

Your term paper should cover a recent (i.e., from the last 5 years) experimental result in AMO physics or quantum optics. Both topics are to be defined broadly. Quantum optics can include experiments on superconducting circuits, quantum dots, etc. AMO physics can include experiments on strongly correlated quantum matter, spectroscopic techniques applied to new areas like medical imaging, or devices based on atoms. Find a topic that interests you or is related to your own research (past or present). You should start by searching for a paper that will be your principal reference. Places to look include the arXiv (try cond-mat, quant-gas, quant-ph, and atom-ph), Phys. Rev. Lett., Phys. Rev. A, Science, Nature, and Nature Physics. Review articles from Reviews of Modern Physics or Reports on Progress in Physics can be helpful to look at to understand the broader context.

Your paper should address:

- What are the primary experimental observations and results?
- What was the motivation for these experiments? What important question to they answer or how do they enable new physics? How does the result fit into the historical context of this field?
- Without getting too into technical details (unless the main result is a new technology), explain how the experiments were done.
- Explain some of the basic physics behind the result. If you like, the bulk of your paper can be your own calculation relevant to the result.
- What do you think is an exciting next step or ultimate goal in this area?

Your paper should be 6-10 pages including references and figures. It is OK to copy figures from papers---just be sure to include a reference to the paper you take it from. Plagiarism (which includes copying content without a reference or copying text under any circumstance) will result in a failing grade for your term paper. You should make some attempt to investigate the broader context for the result you choose; about 10 references included in your paper is right.

Term papers will be due by December 16. You need to choose a paper for your primary reference by November 16. Send me an email with a link to your paper by then. Your term paper should be submitted to me via email as a pdf.