

Term Project – Part-I

Phys 438/538: Atomic, Molecular and Optical Physics

Due Date: Friday, 18 March 2016 [Till 23:59]

version: 28 January 2016

Part-1: *Quantum Projection Noise* – 50%

- Read the seminal paper by Itano et al. which is the basis of quantum metrology.
- Deepen your understanding in this field by other sources.
- Prepare presentation slides introducing and discussing this paper.
- Within this presentation, also include tutorial material on ion trapping, shot noise, and laser cooling.

Minimal Requirements/Details:

- There should be minimum 40 and maximum 70 slides (all different, not key strokes).
- It needs to be a single **pdf** file (no animations), emailed to me by the deadline.
- Target a physics audience who are not specialists in this field.
- The presentation must have cover and outline pages. The last page(s) should list the references you have used.
- Any third party image or graph should have a clear credit for its source, (inc. those from the paper itself).
- Grading will take into account how you reflect your own understanding, and the pedagogical level of the presentation.
- You are (and should be) on your own . . .