Term Project: Proposal (Research Question and Methods)
PHYS 6260 – Prof. John Wise
Due Friday, March 8, 11:59pm (Upload PDF to Canvas; one per project)

- 10% of the total project grade. Will be graded for completeness.

Write a report (including figures, bullet lists, tables, etc.) with the following items. Please list all group members in your proposal. Upload as a PDF.

Report length
- Individual projects: 2–3 pages but no more than 4 pages, roughly 1,000 words
- Group projects: 4–6 pages but no more than 8 pages, roughly 2,000 words
- Single spaced, 12 point font, 1-inch margins

Research topic and question: Give the physics sub-field that your group is studying, along with a overall research question that your project will answer. Before finalizing a research topic, please confirm with Prof. Wise that it is a reasonable choice.

Simulation description: Describe what physical scenario your project will simulate.

Required input physics: Give the physics concepts and pertinent equations that your project will use.

Literature review: Provide 1 page (individual projects) or 2 pages (group projects) of background and introduction, similar to a journal article, on the problem with the appropriate references. These references can range from historical (that is, several decades old) to recent research.

Computational methods: Give computational method(s) you will use to solve these necessary equations. If this is covered in the lecture notes, give the chapter of the Newman book where this method is discussed, or if it's not covered in the book, give outside references.

Simulation setup: Give an estimate of the computational domain spatial extent (if applicable) and the time integration limits (if applicable).

Quantities to inspect: List a set of variables (for example, density, position, temperature, etc.) that will be studied and inspected from your simulation. Will they be inspected as a function of time, space, or both? What does each quantity tell you about the system?

References: If you cited any papers or sources, provide a list of references.