

# Homework 12 Self-reflection

Anthony and Spencer

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## 1 Homework 10

For the last couple of weeks, we have discussed our plans with the project and worked on the paired project homework questions separately, but on a Shared LaTeX file online. On the first homework question, we discussed various topics before deciding on Laser Wakefield Acceleration. On the second homework, Spencer created the original file with details and a bulleted timeline. Anthony expanded on the project description and connected each of the bullets to the paired project homework questions. This week, we both reviewed different sources, discussed how we could implement the results of the sources into our model, and wrote a description to answer the feedback and project question. The work of the project seems to be evenly distributed. Once we start calculations, we'll be meeting up to work on the code together.

## 2 Homework 11

For homework 11, we met up and coded the motion of a single electron from an incident electromagnetic plane wave. We coded together on a Jupyter notebook. We also wrote a brief summary of our work this week.

## 3 Homework 12

For homework 12, we met up and produced figures 2 and 3 (seen in HW12 ProjectWork). After discussing what would be most relevant for the poster, we decided to create figures depicting the plasma bubble. Anthony worked on figure 2 and Spencer worked on figure 3. Both of us built on the code we started last week.

Last week, we were able to answer how a single electron evolves in time and position after being hit by an incident plane wave. We used that calculation to produce results for many electrons. Next week, we expect to produce the time dynamics of the single beam electron as it moves through the bubble. This will require a calculation of the electrostatic force on electron in small steps of time.