WHAMP instructions/Advanced space plasma exercise

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1 Installing WHAMP

1. Get the WHAMP code by downloading at `https://github.com/ykempf/whamp` or using the git command

   ```
   $ git clone git@github.com:ykempf/whamp.git whamp
   ```

   which will download the code into the `whamp` directory.

2. Go to the code folder

   ```
   $ cd whamp/src/
   ```

   and compile the code

   ```
   $ make
   ```

   and do not worry about all the warnings. The file called `whamp` is the executable you will need.

By running this `whamp` executable you can use WHAMP on a point-by-point basis as the instructions in the manual tell you to do. But that is a bit painstaking so we use a script to automatise the process.

2 Running WHAMP from the Python scripts

1. Copy the `whamp` binary to the `exercise` directory.

   ```
   $ cp whamp ../exercise
   ```

2. Run the script with Python

   ```
   $ cd ../exercise
   $ python3 <file>.py
   ```

   and look at the 3D dispersion surfaces.

3. If you wish to save a png instead of displaying the result on screen, swap the `#` comment character between the last two lines of the script so that you use

   ```
   matplotlib.pyplot.savefig('plot.png', dpi=DPI)
   ```

   instead of

   ```
   matplotlib.pyplot.show()
   ```

   which will write the file `plot.png` to disk.