ELEC 4700 – YCPA

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2.b. SoftSimpleReg.m is simulating the electric and magnetic fields caused by the propagation of a plane wave in a medium.

2.c.i. Commenting out the inclusion worked, it caused the wave to behave uniformly across the entire region.

2.c.ii. The bc structure is used to set the boundary conditions and source for the simulation.

2.c.iii. bc{1}.s{1} is setting up a single source object for the simulation. Editing associated parameters allows us to change the behaviour and location of the source.

2.c.iv. bc{1}.xm/xp/ym/yp are used to set the type of boundary condition for each of x minus (left), x plus (right), y minus (bottom), and y plus (top). For example, changing the boundary type from ‘a’ to ‘e’ changes the behaviour of the corresponding boundary to a reflective surface.

The file SoftSimpleReg.m has been edited to include vertical grating.

The file SoftSimpleReg\_Creative.m shows the behaviour of the wave around two concentric circles having a greater epsilon value than their surroundings. Furthermore, this simulation now accounts for two separate plane wave sources, located a distance of y = ¾\*y\_max apart from one another.