

5. CONCLUSIONS

Wiggler fields can be produced when the medium, in which an electromagnetic wave is propagating, is suddenly changed to a plasma medium. The characteristics of these fields can be controlled by varying the parameters of the source wave and of the plasma medium. The wiggler fields can also be altered by the presence of a static magnetic field prior to the switching of the plasma.

When the collision frequency is introduced into the analysis, damping expressions are generated. These expressions show that the presence of a static magnetic field prior to switching on the plasma, reduces the amount of damping experienced by the wiggler field. The damping can be reduced by increasing the strength of the static magnetic field or by increasing the plasma frequency.

A more generalized model for the initial static magnetic field is examined. The model introduces a coupling term into the problem which needs to be investigated further.