

Abstract

In this thesis, we studied the circularly polarized waves associated with ultra-relativistic electrons residing in Van Allen radiation belts. There is magnetized plasma in radiation belts. In this case we take UR electrons in spherical coordinates. Here we consider the plasma as collision less while including thermal effects. Therefore we take Bi-Maxwellian distribution in term of momentum space anisotropy. Adding the relativistic effects we find out alternative dielectric tensor for these UR electrons. Using spherical geometry we find out the ultra-relativistic dispersion relation of CP waves. At the end of this thesis we discussed from the graphs that how CP waves propagate in radiation belts plasma.