

## **ABSTRACT**

Bernstein Mode for a relativistic degenerate electron plasma is investigated. Using relativistic Vlasov-Maxwell equations, a general expression for the conductivity tensor is derived and then employing Fermi-Dirac distribution function a generalized dispersion relation for the Bernstein mode is obtained. Two limiting cases i.e., non-relativistic and ultra-relativistic are discussed. The dispersion relations obtained are also graphically presented for some specific values of the parameters depicting how the propagation characteristics of Bernstein waves as well as the Upper Hybrid oscillations are modified with the increase in plasma number density.