

Download Chen Plasma Physics Solution Set 3

A nonthermal plasma, cold plasma or non-equilibrium plasma is a plasma which is not in thermodynamic equilibrium, because the electron temperature is much hotter than the temperature of heavy species (ions and neutrals). Non-thermal dielectric barrier discharge (DBD) plasma is an innovative and emerging field combining plasma physics, life science and clinical medicine for a wide-range of biological applications. This work deals with the behavior of fermions in the background of kinklike structures in the two-dimensional spacetime. The kinklike structures appear from bosonic scalar field models that engender distinct profiles and interact with the fermion fields via the standard Yukawa coupling. Mathematical physics refers to the development of mathematical methods for application to problems in physics. The Journal of Mathematical Physics defines the field as "the application of mathematics to problems in physics and the development of mathematical methods suitable for such applications and for the formulation of physical theories ...