

Abstract:

The talk is related to mathematical problems of kinetic theory of plasma. We consider some properties of the Vlasov-Poisson-Landau kinetic equations for the case when the typical length is the mean free path, not the Debye radius. What are the limiting equations in that case? Are they well posed? How to describe the corresponding necessary conditions of transition to the limit? These and similar questions are the main subject of the talk. All our formal considerations for the non-linear case are supported by more serious analysis of the linearized equations and their exact solutions.