Is the strongly coupled gas plasma exist?

Kalitkin N.N., Kozlitin I.A.

At the previous sessions the wide-range model of plasma microfield constructed “ab initio” was presented. This model is reliably confirmed by optical experiments on luminosity and disappearance of spectral lines in high-dense plasma. This microfield is born by chaotic heat moving of charged particles. This idea gives the density electric energy of charges interaction, i.e. the thermodynamic correction for non-ideality. This correction leads to the full thermodynamics for strongly coupled plasma.

The calculations show that in gas plasma even at almost condensed matter densities corrections to all thermodynamic functions do not exceed few percents. So gas plasma in this model can not be strongly coupled. This agrees with facts that in all thermodynamic experiments the effects of non-ideality were not still covered.