short wavelength and long wavelength, were considered. Fast growing magnetic perturbations localized near the plasma surface are the salient features of this instability. The spontaneously generated magnetic fields observed in laser produced plasmas may be related to this instability. Applications of our findings to the different accelerating plasma systems were also considered.

REFERENCE:

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A PROBABILISTIC APPROACH TO THE PROBLEM OF IONIZATION POTENTIAL LOWERING IN HOT DENSE PLASMAS

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Two new concepts were introduced in connection with the problem of the ionization potential lowering. First, a probabilistic approach was presented to account for the fluctuating nature of the local plasma microfields. Second, two mechanisms responsible for the ionization potential lowering were incorporated in the probability function. These are the previously used ion quasi-static potential lowering and a newly introduced electron collisional potential lowering. The total probability function, which is a convolution of these two mechanisms was used to calculate various plasma parameters, such as the average ionization potential reduction, the partition function and the free-bound recombination edge shift. The validity of the approximations of the model as well as the thermodynamic consistency of the approach were also considered.

POINT EXPLOSION SIMULATION BY FAST SPARK DISCHARGES [1]

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Most of the interest in recent years in high current pulsed discharges (i.e. with initial current rise of $(dI/dt)_{t=0} > 10^{10}$ A/sec) in gases has been concentrated on the discharge period dynamics. Little attention has been paid to the "late hydrodynamics" produced by these fast spark discharges. This late hydrodynamics regime occurs several tens of microseconds after the discharge period, which has a duration of a few microseconds. In this work it was shown that these late hydrodynamics effects can be described by a point explosion simulation.