FERMI-LIQUID APPROACH FOR THE DESCRIPTION OF THE INITIAL STAGE OF FRAGMENTATION AT HEAVY NUCLEI COLLISIONS

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S u m m a r y

A mechanism is proposed for the initial stage of the instability development that can induce the fragmentation of the nuclear matter arising as a result of collisions of non-relativistic heavy nuclei. The collision of heavy nuclei is simulated as a collision of two unbounded Fermi-liquid "drops". The instability origination in such a system is related to the propagation of increasing oscillations in nuclear matter. These oscillations can exist in a resting Fermi-liquid: the modified Landau zero sound, modified spin and isospin waves, and a combination of these more simple waves. These instabilities are analogous to the beam instability in the ordinary electron plasma. The analysis of the obtained increments of oscillations is performed. Its results can be used for the experimental confirmation of the proposed mechanism of the fragmentation at nuclear collisions. Directions along which nuclear matter "jets" can be expected are specified.