

On the possibility hydrodynamic instability and spontaneous magnetic field observation in compressed laser fusion targets

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Abstract.

The spontaneous magnetic fields (SMF) up to 10^2 MGs are generated in compressed laser fusion targets due to hydrodynamic instability development [1]. They can be observed with help of scattering of relativistic electron bunches, which irradiated the target [2]. Such electron bunches could be produced by the additional picosecond high power laser pulses synchronized with the main driven laser pulses and special targets [3]. The configuration of SMF is defined by the curls distributions in compressed plasma. As the results, there is opportunity to create the map of such curls in dense plasma on base on magnetic field measurement. The results of 3D numerical simulations using “AURORA”-code [4] are presented in the paper.

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