

Abstract Submitted
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Development of a New Fluid Code to Study Laser-Plasma Instabilities¹ LIANG HAO, RUI YAN, JUN LI, CHUANG REN, Dept. of Mechanical Engineering, U. of Rochester — We have developed a new fluid code to study laser-plasma instabilities. Its physics model is based on the plasma two-fluid model combined with the vector potential equations of light without any envelope approximations. Incident lasers are launched from an antenna and the perfect-matched layers (PML's) technique is implemented in our boundary conditions. Landau damping of Langmuir waves and ion-acoustic waves are included by solving the damping terms in phase space based on the time-split method. Currently, a one-dimensional version of the code is complete and has been tested in study of the laser-plasma instabilities for shock ignition.

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