



1. Title:	RZLine MHD model of z-pinch discharge based EUV source
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3. Abstract body:

A new two dimensional (r,z) Euler MHD code RZLINE is developed for modelling EUV sources. The code allows description of shock waves, electron and ion thermo-conductivity, pinch effect, magnetic field diffusion, Joule dissipation and radiation transport. Nonstationary ionization and nonequilibrium radiation effects in spectral lines are included approximately on the basis of detailed calculations for Sn and Xe ions by the code THERMOS. Another new feature of the code is the model of initiating phase of discharge which includes evaporation of liquid tin by short laser pulse (temperature profile in liquid tin is calculated as well), expansion of tin vapor in vacuum, its breakdown with subsequent absorption of laser energy, ionization of tin vapor and fast expansion of tin plasma to anode. Modelling of ISAN tin discharge based EUV source was fulfilled. Calculated data for conversion efficiency, EUV signal and discharge current oscillograms, axial and radial sizes of EUV emitting region and spectra of plasma were compared with experimental observations.