



1. Title:	Calculation of Sn and Xe emission spectra in discharge devices: the influence of reabsorption in spectral lines
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3. Abstract body:

The emission of Sn or Xe plasma near the tenth ionisation degree yields an array of a huge number of overlapped spectral lines. Modelling of such plasma is very important for the creation of new EUV source for lithography. In discharge devices the ion density reaches $1e19$ 1/ccm with temperature 40 eV. In such conditions the radiation transport is strongly coupled with level kinetics. Due to this fact and because of huge number of spectral lines it is very difficult to carry numerical calculation of radiation transport without significant simplification of the problem. Meanwhile simple approximations such as escape-factor approach don't work here due to overlapping spectral lines.

We propose a new approach which is very cheap and effective. The method is based on preliminary detailed calculations for simple homogeneous (over electron temperature and electron density) plasma layers with given radiation field. In this case one can produce calculations including level kinetics and radiation transport with several thousands points for frequency grid to represent in detail each spectral line. Afterwards these data are used to obtain radiative properties and emission spectra in RMHD calculations for complex 2D geometry with nonhomogeneous nonstationary plasma at arbitrary temperature, density and optical thickness.

The results of calculations are benchmarked with more accurate approach and are compared with experimental data.