THERMOS Toolkit: Self-consistent solution of the radiation transfer equation with kinetics in one-dimensional geometries

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A software module has been developed to calculate the properties of an one-dimensional non-local thermodynamic equilibrium (non-LTE) plasma. Numerical simulation is produced within a consistent solution of the radiation transfer equation with a system of rate equations in the collisional-radiative equilibrium approximation. Modeling can be performed in three simplest one-dimensional geometries (an inhomogeneous infinite flat layer, a ball and an infinite cylinder inhomogeneous along the radius). The development of the module and its inclusion in the THERMOS Toolkit [1] has made it possible to significantly expand the range of problems to be solved for modeling the properties of plasma under the non-LTE conditions.
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[1] THERMOS URL `http://keldysh.ru/thermos/en`