

Abstract Submitted
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Gyrokinetic Simulation for the Advanced Plasma Source¹ BENJAMIN SCHROEDER, RALF PETER BRINKMANN, None — This contribution presents a model based on gyrokinetic theory. The model can be applied to the “Advanced Plasma Source” by Leybold Optics and similar sources that are used for Plasma Ion Assisted Deposition (PIAD) of optical coatings. The source consists of an electron emitting lanthanum hexaboride cathode surrounded by a copper anode and a solenoid that generates an axissymmetric magnetic field of around 25mT. The pressure is typically 0.02 Pa. The electron mean free path exceeds the discharge dimension so that a kinetic model has to be applied. A kinetic equation is derived from Boltzmann’s equation and describes the non-local behaviour along the magnetic field lines and diffusion across these. The numerical solution of the equation using different boundary conditions is presented.

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