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PIC/MC simulation of electron current to spherical probe DAVID TRUNEC, Masaryk University, ZDENEK BONAVENTURA, PETR ZIKAN — A computer model of particle movement in surroundings of spherical electrostatic (Langmuir) probe immersed in the plasma has been developed. This model is based on Particle in Cell (PIC) and Monte Carlo (MC) methods. The model allows to calculate the electron current to the probe in the case when the collisions between electrons and neutral gas atoms occur and therefore usual probe theories are not valid. As a case study spherical probe immersed in low temperature plasma consisting of electrons and argon ions in helium buffer gas was chosen. Such plasmas are usual in flowing afterglow experiments. In this contribution calculated probe characteristics for different pressures are presented together with spatial profiles of particle concentrations and electric potential.

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