

Abstract Submitted
for the GEC08 Meeting of
The American Physical Society

Study of an electron-attracting sheath: the effect of secondary electron emission GILLES CARTRY, LOÏC SCHIESKO, MARCEL CARRERE, JEAN-MARC LAYET, PIIM, CNRS - Universite de Provence, PLASMA-SURFACE TEAM — A copper sample facing a mass spectrometer (EQP300) is biased positively beyond plasma potential in low pressure argon plasma. Some Ar^+ and Ar^{2+} ions are created in the sheath by electrons extracted from plasma and are accelerated toward the mass spectrometer where they are detected according to their energy. Ion energy is related to the local sheath potential at which the ion has been created. Providing careful energy calibration of the mass spectrometer, Ion Distribution Function (IDF) allows probing in a non perturbative way electron attracting sheath potential. We observe a strong decrease of the ion signal some few volts before sample bias. We attribute this effect to the presence of secondary electrons shielding the sample potential. Potential profile and IDFs are computed using a model including secondary emission. Fit of Ar^+ and Ar^{2+} IDFs provides an estimation of secondary emission yield and secondary electron temperature.

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Date submitted: 16 Jun 2008

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