Abstract Submitted
for the GEC10 Meeting of
The American Physical Society

On the Perturbation of Plasma by Emissive Probes CODRINA IONITA, University of Innsbruck, Austria, MILAN CERCEK, BORIS FONDA, Jozef Stefan Institute, Ljubljana, Slovenia, TOMAZ GYERGYEK, University of Ljubljana, Slovenia, GREGOR FILIPIC, Jozef Stefan Institute, Ljubljana, Slovenia, JERNEJ KOVACIC, University of Ljubljana, Slovenia, ROMAN SCHRITTWIESER, University of Innsbruck, Austria, UNIVERSITY OF INNSBRUCK, AUSTRIA TEAM, JOZEF STEFAN INSTITUTE, LJUBLJANA, SLOVENIA TEAM, UNIVERSITY OF MARIBOR, SLOVENIA TEAM, UNIVERSITY OF LJUBLJANA, SLOVENIA TEAM — Often it is claimed that the floating potential of emissive probes remains below the plasma potential and that they strongly perturb the plasma. Obviously, for negative bias with respect to the plasma potential the full emission current flows to the plasma which can lead to strong perturbations. In a magnetized plasma we even saw additional ionization when the probe was biased below the ionization potential of the background gas. However, under ideal conditions the floating potential of a probe with well-adjusted emission was found to be almost equal to the plasma potential. Moreover, in this case no perturbation of the plasma by the emissive probe is seen. This was tested by a small cylindrical cold probe on the same magnetic field line as the emissive probe further upstream.

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Date submitted: 11 Jun 2010 Electronic form version 1.4