## Abstract Submitted for the GEC19 Meeting of The American Physical Society

Dynamical charging of a dielectric surface exposed to a plasma jet : quantitative comparison between experiments and simulations<sup>1</sup> ANNE BOURDON, PEDRO VIEGAS, LPP, CNRS, Ecole Polytechnique, ELMAR SLIKBOER, LPP and LPICM, CNRS, Ecole Polytechnique, Tu/e, The Netherlands, MARLOUS HOFMANS, Tu/e, The Netherlands, ZDENEK BONAVEN-TURA, Masaryk University, Czech Republic, ANA SOBOTA, TU/e, The Netherlands, OLIVIER GUAITELLA, LPP, CNRS, Ecole Polytechnique — In this work, we study through a quantitative comparison between fluid modeling and experiments, the transient charging of a surface under exposure of a non-equilibrium plasma jet at atmospheric pressure. For mono-polar pulses with variable pulse duration and amplitude, the electric filed inside the target is measured. We show that the charging time (i.e. the time from impact of the ionization wave till the fall of the high voltage pulse) is crucial to understand the plasma-surface interaction. When the charging time is kept relatively short (less than 100 ns), the surface spreading of the discharge and consequently the surface charge deposition are limited. When the charging time is relatively long (up to microseconds), the increased surface spreading and charge deposition significantly change the electric field to which the target is exposed to, during the charging time, and when the applied voltage returns to zero.

<sup>1</sup>Simulations have been done thanks to the computational resources of the clusters Hopper and Zoidberg at Ecole Polytechnique. AS thanks the ANR for the invited international expert grant, hosted by Ecole Polytechnique. ZB acknowledges support by project LM2018097 funded by the Ministry of Education, Youth and Sports of the Czech Republic.

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Date submitted: 12 Jun 2019

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