

Abstract Submitted  
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**Electric field characterization of a plasma-target interaction at atmospheric pressure: modeling and experiments** ANNE BOURDON, PEDRO VIEGAS, ELMAR SLIKBOER, LPP, Ecole Polytechnique, MARLOUS HOFMANS, ANA SOBOTA, TU/e, ADAM OBRUSNIK, ZDENEK BONAVENTURA, Masaryk University, OLIVIER GUAITELLA, LPP, Ecole Polytechnique — Simulation and experimental results are coupled to better understand the dynamics of interaction between a helium plasma jet and a dielectric target. In this work we focus on the electric field associated to plasma propagation in the tube and in the plasma plume, with gas mixing at the end of the tube, and to the interaction with the target. In particular this work addresses the measurements of the axial and radial electric field components in the plasma plume by Stark polarization spectroscopy and inside the dielectric target by Mueller polarimetry. A 2D fluid model is used in a complementary way to experiments in order to simulate the plasma jet and to study the contribution of volume charges and surface charges to the spatio-temporal evolution and distribution of the electric field during the plasma-surface interaction.

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