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Electrical vacuum breakdowns in large-gap DC-setup: experiment versus theory

Monday 21 May 2018 15:00 (30 minutes)

Vacuum breakdowns in DC conditions between the electrodes with large gap (several mms) are believed to initiate at anode. We have investigate the origin of anodic plasma by setting up DC experiments with the fast intensified charge-coupled device camera (ICCD) and combining our observations with theoretical calculations. We observe the evolution of light emission, analyze the typical waveforms of voltage and current during the breakdown and conclude that origin of plasma is not at anode.

The presentation will discuss the new observations and give the overview of the theoretical efforts ongoing at University of Helsinki on a multiscale simulation of vacuum breakdown phenomenon.

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