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**Magnetic field effects on the propagation of positive streamers**

ANBANG SUN, State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xian Jiaotong University, Xian 710049, China, JANNIS TEUNISSEN, Centrum Wiskunde Informatica (CWI), Amsterdam, The Netherlands, UTE EBERT, Centrum Wiskunde Informatica (CWI), The Netherlands; Department of Applied Physics, Eindhoven University of Technology, The Netherlands — We investigate how strong magnetic fields affect the propagation of positive streamer discharges. Because such discharges grow opposite to the electron drift direction, they require a source of electrons ahead of them. Here we focus on air, in which photoionization supplies such free electrons isotropically around the streamer head. Using a 3D particle model, we investigate how strong transverse magnetic fields alter the trajectory, ionization rate and energy of these source electrons, leading to streamer branching in the plane spanned by  $\mathbf{E}$  and  $\mathbf{B}$ .

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