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Electron desorption effect of accumulated electrons in atmospheric pressure dielectric barrier discharges HARUAKI AKASHI, TOMOKAZU YOSHINAGA, National Defense Academy, Japan — Recently, atmospheric dielectric barrier discharges(DBDs)are widely applied to various fields. However, in DBDs, there are many parameters which affect to plasma significantly, such as dielectric materials and its thicknesses, gas, gas pressure and applied voltage waveform, and so on. A few researchers investigatedon the interaction between plasma and dielectric surfaces but mostof phenomena is still inside the veil.Golubovskii et al[1] and Itoh et al [2] are mentioned about somesurface interactionsin DBDs. And authors also have been simulated DBDsincluding electron desorption effect. In the present paper, the electron desorption effect lead by hot gas particles have been examined inatmospheric pressure DBDs using two dimensional fluid model.The hot gas particle regions are generally formed in the vicinity of the dielectrics where the filament discharge formed. As a results, effect of electrondesorption causes stable filament discharges while hot gas temperature regions in the vicinity of the dielectrics are exist. But without hot gas regions, the filaments are randomly generated in the discharge space. [1] Y.B.Golubovskii, et al, J.Phys. D: Appl.Phys. Vol.35, pp.751-761 (2002) [2] H.Itoh et al, ESCAMPIG XXIII, Bratislava, Slovakia, p.192 (2016)

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