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**The effect of collision frequency on the electric field distribution in a high frequency capacitive discharge** HYUNJOO KANG, WOORYOUNG CHOI, BORAM LEE, CHINWOOK CHUNG, Hanyang University — The electric field distribution in a high frequency capacitive discharge was investigated by solving Maxwell's equations. It was found that electric field distribution is governed by two current sources: displacement currents and conduction currents. When the displacement current is dominant, the electric field distribution has a convex shape while it has a concave shape in case of high conduction current. In a radio frequency capacitive discharge, there are the two current components which are correlated with plasma density and collision frequency. From our calculation, we found that when collision frequency is comparable with plasma frequency, it can change the electric field distribution significantly from the concave shape to the convex shape and vice versa. Therefore, it can be one of control knobs for uniform electric field distribution.

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