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**Experimental and computational study of gas temperature characteristics for atmospheric-pressure microgap discharge** AKIHIRO KONO, TOMOYUKI SHIBATA, MITSUTOSHI ARAMAKI, Nagoya University — We are studying microwave-excited atmospheric-pressure high-density nonthermal plasma produced in the microgap between knife-edge electrodes, aiming at an application to VUV light source. The gas temperature is an important parameter for such an application and has been studied experimentally (from optical emission) and computationally for air and He discharges. In a previous presentation [1], we reported that a gas dynamic simulation indicates the existence of strong convection caused by a large temperature difference between the plasma center and the wall. However, detained reanalysis indicated that this convention was an artifacts caused by a particular discretization method of the pressure term. Here, we show, reanalysis of the previous results by a new code and extend the work to include Ar plasmas as well as to include the case of using new electrode system, in which gas blows out from the edge of the electrode. (Work supported by Grant-in-aid 15075205 from MEXT Japan)

[1] A. Kono, GEC2004, Bul. Am. Phys. Soc. 49, 76 (2004).

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