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Experimental Assessment of How Distance Between Two Plasma Actuator Affect a Quiescent Flow ANDREW QUINTON, ALVIN NGO, JAMEY JACOB, Oklahoma State University-Stillwater — In the past, Cold atmospheric plasma (CAP) has been used in the aerospace industry, for active flow control. In this experiment, the effects of flow control are expanded on by measuring how the distance between two surface dielectric barrier discharge (SDBD) actuators affect a quiescent flow. The two SDBD actuators will be placed on a flat surface at a far enough distance to be outside the influence of each other and slowly pushed in. The goal of this study is to find a distance where the flow from the first SDBD actuator flows smoothly into the second SDBD actuator to generate the optimal induced velocity. The velocity vectors will be obtained using a particle image velocimetry (PIV) setup. The expected results are that the second SDBD actuator will interrupt the flow from the first actuator when it is too close by producing a counter ionic wind, and will have little to no effect on each other when they are far enough apart.

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