

3C06: STABILITY OF CH₄-N₂/AIR JET DIFFUSION FLAME ON VARIOUS BURNER RIM THICKNESSES.
Yasuhiro Otakeyama, Takeshi Yokomori, Masahiko Mizomoto
Keio University, Japan

Comment by Godfrey Mungal, Stanford University, USA
mungal@stanford.edu

Although your flow/flame is laminar-like, there seems to be some possible similarity to [1] where edge flame velocities are discussed and also to [2] where the stoichiometric velocity is discussed.

References:

- [1] L. Muñiz, M.G. Mungal, *Comb. Flame* 111 (1997) 16–31.
[2] Donghee Han, M.G. Mungal, *Proc. Combust. Inst.* 28, (2000) 537–543.

Reply by Takeshi Yokomori
yokomori@mech.keio.ac.jp

The flame base showed in the present study is basically stabilized in the laminar flow, thus the stabilization mechanism could be explained simply. In particular, this study showed that Blow-off and Lift-off of the flame base from the burner rim were caused by the flame stretched extinction. The comment gives some interesting researches on the Lift-off behavior of the turbulent non-premixed flame. The authors guess that the Lift-off mechanism argued in the present study might be applicable for those researches. In the case of turbulent flames, however, the stabilization mechanism should be more complicated, because of the influence of many other factors related to the unsteady motion. To apply the present mechanism to turbulent flames, the unsteady effect should be taken into consideration, and it will be an interesting topic in our future work.