Abstract Submitted
for the DFD17 Meeting of
The American Physical Society

Near-wall flame propagation characteristics KOSUKE NARUKAWA, YUKI MINAMOTO, MASAYASU SHIMURA, MAMORU TANAHASHI, Tokyo Inst of Tech - Tokyo — Understanding near wall flame propagation behavior is important for turbulent combustion modelling including flame—wall interaction, but also could be useful as a robust experimental technique for the measurement of laminar flame speed. Previous studies have measured time-resolved CH fluorescence, based on which flame displacement speed is estimated as a function of time or distance from the wall. The present study is the sequence of the experimental work and is based on direct numerical simulations (DNS) (i) to investigate near wall flame behavior in the context of flame displacement speed at various definition in a detailed manner, and (ii) to explore the possibilities of utilizing these characteristics as an experimental technique as a substitute or complement for a conventional experimental technique such as a double kernel method.

Kosuke Narukawa
Tokyo Inst of Tech - Tokyo

Date submitted: 28 Jul 2017 Electronic form version 1.4