

5A02: EXPERIMENTAL AND NUMERICAL STUDY OF A CONICAL TURBULENT PARTIALLY PREMIXED FLAME.

B. Li, E. Baudoin, R. Yu, Z.W. Sun, Z.S. Li, X.S. Bai, M. Aldén, Lund University, Sweden

M.S. Mansour, Cairo University, Egypt

Comment by Hossam El-Asrag

hossam@stanford.edu

Can you shed some light on how you coupled the G-equation and the flamelet model?

Reply by Xue-Song Bai

xue-song.bai@vok.lth.se

G-equation is used to determine the triple flame front by which the flow field is divided to regions of $G < 0$ and $G > 0$. In the flowfield where $G < 0$ the mixture is chemically inert whereas in $G > 0$ the flame is assumed to be in the non-premixed flamelet regime. Stationary flamelet library is used to determine the species, temperature and density fields in the region $G > 0$ from two scalar variables, the mixture fraction and scalar dissipation rate. Since the premixed flame part of the flame is relatively small as compared with the diffusion flame part of the flame, the premixed flame contribution to the species, temperature and density fields has been neglected.