

Abstract Submitted
for the DFD07 Meeting of
The American Physical Society

PIV Experimental Investigation of a Single-Phase Turbulent Mixing Layer¹ FUDE GUO, BIN CHEN, LIEJIN GUO, ZHIWEI WANG, XIMING ZHANG, State Key Laboratory of Multiphase Flow in Power Engineering, Xi'an Jiaotong University, P. R. China — In this work single-phase turbulent mixing layer was investigated by PIV at three different velocity ratios. The results show that average vorticity along the streamwise central line decreases with the development of shear layer, and the decreasing speed is faster at the higher velocity ratio. Comparison of the average vorticity distribution on different cross section at similar Reynolds number indicates that the vorticity has a peak value at the high speed side and a vale value at the low speed side near the split edge. The interesting thing is that both of the peak and vale value decreased with the velocity ratio increasing for similar Reynolds numbers. Reynolds stress distribution along different cross-section of the mixing layer is increased with the increasement of the velocity ratio.

¹This work was supported by National Science Foundation of China (No. 50676079,50521604) and Key Project of Chinese Ministry of Education (No. 107101)

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Date submitted: 02 Aug 2007

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