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Study of the Front Structures of Gravity Current Using Simultaneous PIV/PLIF Measurement JUN CHEN, DUO XU, Purdue University, SCHOOL OF MECHANICAL ENGINEERING, PURDUE UNIVERSITY TEAM — The mixing and entrainment associated with the front development of gravity current have important implications in studying of many atmospheric and oceanic flow problems. A series of laboratory experiments are performed to investigate the development of the front structure of gravity current in an apparatus in which dense fluid is introduced into a less dense environment through a locking gate. A simultaneous PIV/PLIF system is developed to measure the velocity and density fields. The dynamics and structures around the current front are examined as well as the effect of bottom inclination.

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