

Abstract Submitted
for the DFD09 Meeting of
The American Physical Society

Effect of initial conditions in low-Atwood Rayleigh-Taylor Mixing

YUVAL DORON, ANDREW DUGGLEBY, Texas A&M University — The effects of interface initial conditions in low-Atwood number Rayleigh-Taylor mixing are reported. The low-Atwood number water channel at Texas A&M is modified with a servo motor controlled flapper device at the end of a splitter plate. The familiar bubble and spike phenomena for different wave numbers are observed. Average mixing rates are measured optically with the application of Beer-Lambert law and are used to measure the effect of initial conditions on the mixing height growth rates. Results show that single mode initial conditions all achieve the same growth rates within uncertainty. Details of the experimental set up are included as well as a discussion of future work.

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Date submitted: 08 Aug 2009

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