Abstract Submitted
for the DFD16 Meeting of
The American Physical Society

Bringing first-hand experience one step closer to theoretical understanding[1] HAOXIANG LUO, Vanderbilt University, MIKE MYERS, Oregon Institute of Technology, LUO'S LAB TEAM — Many theoretical concepts and analytical approaches in fluid mechanics are challenging to teach. Classroom demos are very useful to engage and motivate students, but they do not necessarily lead straightforwardly to higher level understanding of model abstraction that is expressed with mathematical equations. To facilitate the process, we have designed a few demos and integrated them with quantitative measurements and theoretical analysis. These demos, usually generated from daily life examples, are of low cost and simple to implement, and the experimental procedures do not take significant time in a 50-min lecture. When combining them with classroom interactions, problem solving, and discussions, we found that these modules are effective in helping students in the learning process.

[1]Supported by the NSF.

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Date submitted: 27 Aug 2016 Electronic form version 1.4