Abstract Submitted for the MAR15 Meeting of The American Physical Society

Fluidization of a bubble raft under oscillatory compression¹ KLE-BERT FEITOSA, NICHOLAS HAGANS, CHRISTINE O'DEA, James Madison University — Fluidization of two-dimensional foam is characterized by rearrangement events known as T1-events where clusters of four bubbles switch neighbors. We study rearrangement events in a bubble raft subject to periodic compression by an oscillating boundary. As the amplitude of oscillation increases, T1-events transition from being mostly reversible (elastic regime), to being increasingly irreversible (plastic regime). In addition, T1-events are found to occur most frequently right before the direction of oscillation reverses, where the stress is maximum. By contrast, the velocity field of the bubble raft shows strong dynamical heterogeneity after the direction of oscillation reverses and the stress relaxes.

¹Research Corporation, NSF DMR-1229383

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Date submitted: 14 Nov 2014

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