

Abstract Submitted  
for the SES11 Meeting of  
The American Physical Society

**Dynamics of Polydisperse Foam-like Emulsion**<sup>1</sup> HARRY HICOCK,  
KLEBERT FEITOSA, Dept. of Physics and Astronomy - James Madison University  
— Foam is a complex fluid whose relaxation properties are associated with the continuous diffusion of gas from small to large bubbles driven by differences in Laplace pressures. We study the dynamics of bubble rearrangements by tracking droplets of a clear, buoyantly neutral emulsion that coarsens like a foam. The droplets are imaged in three dimensions using confocal microscopy. Analysis of the images allows us to measure their positions and radii, and track their evolution in time. We find that the droplet size distribution fits a Weibull distribution characteristics of foam systems. Additionally, we observe that droplets undergo continuous evolution interspersed by occasional large rearrangements in par with local relaxation behavior typical of foams.

<sup>1</sup>We gratefully acknowledge support from DOD-ASSURE/NSF-REU grant # DMR-0851367.

Klebert Feitosa  
Dept. of Physics and Astronomy - James Madison University

Date submitted: 20 Sep 2011

Electronic form version 1.4