Flowing properties of quasi-2D emulsions in Couette geometry
CARLOS ORELLANA, ERIC WEEKS, Emory University — We study the flow of dense emulsion in a quasi-two-dimensional Couette geometry. Our samples are oil-in-water emulsions confined between two close-spaced parallel plates, so that the droplets are deformed into pancake shapes. By means of microscopy, we measure the droplet positions and their deformation, which is related to the stress on the individual droplet. In this system without static coulomb friction, we observe a continuous transition from affine motion to topological rearrangements that span the whole system as the area fraction is increased. We compare our results to granular experiments and simulations.