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**Rearrangements during slow compression of a jammed 2D emulsion** XIN DU, CARLOS ORELLANA , XIA HONG, ERIC WEEKS, Department of Physics, Emory University — We experimentally study non-affine motion within an evaporating quasi two-dimensional emulsion system. Our samples are oil-in-water emulsions confined between two close-spaced parallel plates, so that the oil droplets are deformed into pancake shapes. In this system, water slowly evaporates from an open edge of the chamber and, as a consequence, the volume fraction of oil droplets gradually increases. By means of microscopy, we analyzed the motion of droplets and measure the deformation of the droplet's outlines. Based on this information, we calculate the force network and the Voronoi cell when the system approaching jamming state. Using a recently proposed method (J. Rieser et al., arXiv:1509.05496), we calculate the Voronoi cell anisotropy vectors which point from the center of each particle to the corresponding Voronoi cell centroid, and identify void spaces where droplets may be more likely to move toward according to the field of the vectors. These allow us to study the correlations between the force network, the Voronoi vector field, and the non-affine displacements of droplets in our evaporating system.

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