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**Force Network of a 2D Frictionless Emulsion System** KENNETH DESMOND, ERIC R. WEEKS, Emory University — We use a quasi-two-dimensional emulsion as a new experimental system to measure various jamming transition properties. Our system consist of confining oil-in-water emulsion droplets between two parallel plates, so that the droplets are squeezed into quasi-two dimensional disks, analogous to granular photoelastic disks. By varying the droplet area fraction, we investigate the force network of this system as we cross through the jamming transition. At a critical area fraction, the composition of the system is no longer characterized primarily by circular disks, but by disks deformed to varying degrees. Quantifying the deformation provides information about the forces acting upon each droplet, and ultimately the force network. The probability distribution of forces is similar to that found for photoelastic disks, with the width of the force distribution narrowing with increasing packing fraction.

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