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A dynamic jamming point for shear thickening suspensions ERIC BROWN, HEINRICH JAEGER, The James Franck Institute, University of Chicago — Densely packed suspensions can shear thicken, in which the viscosity increases with shear rate. We performed rheometry measurements on two model systems: corn starch in water and glass spheres in oils. In both systems we observed shear thickening up to a critical packing fraction ϕ_c ($= 0.55$ for spherical grains) above which the flow abruptly transitions to shear thinning. The viscosity and yield stress diverge as power laws at ϕ_c. Extrapolating the dynamic ranges of shear rate and stress in the shear thickening regime up to ϕ_c suggests a finite change in shear stress with zero change in shear rate. This is a dynamic analog to the jamming point with a yield stress at zero shear rate.

Eric Brown
The James Franck Institute, University of Chicago

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