

Abstract Submitted
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Anomalous **low**
friction coefficient in shear thickening suspensions¹ CECILE CLAUD, ANTOINE BERUT, BLOEN METZGER, YOEL FORTERRE, IUSTI CNRS Marseille France, GEP TEAM — We study the frictional behavior of classical and shear thickening suspensions under low confining pressure, by measuring the pile slope-angle in rotating drum flow experiments. We show that, at low rotation rates, the pile angle of the shear thickening suspension is about 8.5° , which is much lower than pile angles observed with classical suspensions in the same conditions ($\sim 25^\circ$). We then study the frictional behavior of silica powders in water, and show that we can switch from low to high pile angle by changing the salinity of the suspension. These results support a recent scenario for the shear-thickening transition in such non-Brownian systems, where inter particle repulsive forces suppress friction at low confining pressure.

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