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**Shear thickening oscillation in a dilatant fluid** SHIN-ICHIRO NAGAHIRO, Sendai National College of Technology, HIIZU NAKANISHI, Department of Physics, Kyushu University, NAMIKO MITARAI, Niels Bohr Institute, University of Copenhagen — We report experimental observations of the shear thickening oscillation; spontaneous macroscopic oscillation in the shear flow of severe shear thickening fluids. Using a phenomenological fluid dynamics model for dilatant fluids, we have been predicted theoretically that a dilatant fluid under constant shear stress oscillates due to the shear thickening property coupled with the fluid dynamics. However, such a macroscopic oscillation has never been reported in the literature. In this presentation, we report that strong vibrations of the frequency around 20 Hz is observed using a density-matched starch-water mixture, in the cylindrical shear flow of a few centimeters flow width. The oscillation behavior is consistent with the theoretical prediction.

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