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Flow of soft glassy materials in confined geometry JULIE GOYON, ANNIE COLIN, LOF-Univertsité Bordeaux 1, LOF-UNIVERTSITÉ BORDEAUX 1 TEAM — In this work, we address the question of the flow soft glassy materials in confined geometry. A transparent direct concentrated emulsion of micrometric size flows in a microfluidic channel under a constant applied drop of pressure. The continuous phase or the dispersed phase is seeded with some sub-micrometric fluorescent latex beads. Taking successive pictures of the flow and correlating them allows us to get the velocity profile. We use rectangular micro-channels with high ratio aspect. The experimental data are analysed in the framework of the lubrication. On one hand, the shear stress is calculated thanks to the position in the channel and the pressure. On the other hand, the shear rate is obtained thanks to the slope in the velocity profile. We point out that the flow cannot be described using a unique behaviour law. Indeed, it is perturbed by rearrangements events which induce three-dimensional flows. These events occur preferentially in the vicinity of the wall where they modify and increase locally the velocity. A comprehensive study of the statistics of the rearrangements events is presented. The role of the drop of pressure, the liquid fraction of the emulsion, the droplet size of the emulsion and the attractive forces between droplets are studied. .

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