Terminal velocity and velocity fluctuations of sedimenting suspensions in quasi 2D geometry RODRIGO SOTO, Universidad de Chile, ALEJANDRA ALVAREZ, MICOMO, FRANCISCO MENA, Universidad de Chile — Buoyant suspensions, confined in a quasi two-dimensional geometry, are studied using the Hele-shaw model. In the far field regime, boundary integral methods allow to compute the pressure field and the resulting hydrodynamic interactions. The result is a self-consistent set of equations that include the effect of particle correlations, the effective medium and container walls. Interactions are long-ranged, with effective forces decaying as R^{-2}, leading to undefined values for the terminal velocity. A regularization scheme, modeling the counterflow due to the presence of limiting walls in the sedimentation direction, is derived. The resulting regularized model leads to finite terminal velocity and fluctuations that do not depend on the system size nor its shape.

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