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**Sedimentation and Effective Temperature of Active Colloidal Suspensions** JEREMIE PALACCI, CECILE COTTIN-BIZONNE, CHRISTOPHE YBERT, LYDERIC BOCQUET, LPMCN-Universite de Lyon, LPMCN-UNIVERSITE DE LYON TEAM — We investigate experimentally the non-equilibrium steady state of an active colloidal suspension under gravity field. The active particles are made of chemically powered colloids, showing self propulsion in the presence of an added fuel, here hydrogen peroxide. The active suspension is studied in a dedicated microfluidic device, made of permeable gel microstructures. Both the microdynamics of individual colloids and the global stationary state of the suspension under gravity are measured with optical microscopy. This yields a direct measurement of the effective temperature of the active system as a function of the particle activity, on the basis of the fluctuation-dissipation relationship. Our work is a first step in the experimental exploration of the out-of-equilibrium properties of active colloidal systems. Working along this line, we also present first signatures of collective properties in active suspensions.

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