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Fluid vesicle dynamics and interaction in shear flow. VASILY KANTSLER, ENRICO SERGE, VICTOR STEINBERG, DEPARTMENT OF PHYSICS OF COMPLEX SYSTEMS TEAM — We present experimental results on single vesicle behavior subjected to shear flow, as well as the hydrodynamic interaction between neighboring vesicles. Moreover the dynamics of a vesicle in many-vesicle field is also studied. Tank treading, trembling and tumbling regimes of the motion are described in terms of the dimensionless variables, such as viscosity contrast, excess area and the dimensionless shear. It should be emphasized that vesicle interaction considerably increases tank treading angle fluctuations, though suppressing the transition to tumbling motion.

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