

Optimal Lift Force on Vesicles Near a Deformable Substrate**Julien Beaucourt**, Thierry Biben, Chaouqi Misbah*Université Joseph Fourier (CNRS), Grenoble, France*

We investigate the effects of a deformable substrate on the dynamics of a vesicle in a shear flow. This system can be viewed as a zeroth order model for studying the complex coupling between blood cells and the glycocalyx layer which covers the internal part of microvessels. More precisely, we show that the lift force on spherical vesicles (a model for the leucocytes) exhibits a maximum for a rigidity of the substrate which lies in the physiological range. In the case of unswelled vesicles (for red blood cells), the maximum tends to disappear and the lift force is constant below this value, which appears now as a limit between two different regimes.

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