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Efficiency of a minimal micro-pump in a viscoelastic fluid FILIPPO DE LILLO, GUIDO BOFFETTA, Dipartimento di Fisica Generale, Università di Torino, and INFN — We perform a numerical simulation of a simple micro-pump, and compare its performance in a newtonian and in a viscoelastic fluid. The device consists of two beads which are moved by means of elastic forces. While one bead is held by a static potential, the second one is moved by a pair of potentials alternating periodically. Such system was shown in [1] (where it was named the "dimer") to be capable of forcing a newtonian fluid. We investigate the behaviour of the dimer in a viscoelastic fluid, studying how the rheology of the fluid affects the efficiency of pumping.

[1] M. Leoni, B. Bassetti, J. Kotar, P. Cicuta, and M. Cosentino Lagomarsino, *Phys. Rev. E*, **81**, 036304 (2010)

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