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Continuous translocations in connected chambers under pseudo-hydrodynamic force ERICA SALTZMAN, MURUGAPPAN MUTHUKUMAR, University of Massachusetts at Amherst — Experimental separation of polydisperse synthetic and biopolymers is frequently conducted via combination of electrophoretic or hydrodynamic flow with a series of obstacles or traps. In order to understand the interaction of entropic escape and biased diffusion processes, we conduct simulations on a generic model system. Brownian dynamics simulations are performed on linear chains confined in a series of chambers connected by narrow pores. A uniaxial force designed to mimic the effect of solvent flow acts on each bead of the chain, leading to translocation between chambers. Translocation events are separated by periods of trapping, which shorten with increasing chain length; for long chains individual translocations become indistinguishable.

Erica Saltzman
University of Massachusetts at Amherst

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