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The effects of end-interactions on semiflexible polymers looping

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— Biopolymer looping is a ubiquitous dynamic process that occurs in cell, such as gene regulation and protein folding. We study the dynamics of looping for a variety of chain contour and persistence lengths via simulation and analytical theory. To speed up the looping time in simulation, which is very long for the short, rigid chains, we use the path integral hyperdynamics method. We analyze the effects of static and hydrodynamic interactions between the end beads on the looping time.

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