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Title:	Driven translocation of a semiflexible polymer through a conical channel in the presence of attractive surface interactions
Authors:	Sharma, Andri (/jspui/browse?type=author&value=Sharma%2C+Andri) Kapri, Rajeev (/jspui/browse?type=author&value=Kapri%2C+Rajeev) Chaudhuri, Abhishek (/jspui/browse?type=author&value=Chaudhuri%2C+Abhishek)
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Abstract:	We study the translocation of a semiflexible polymer through a conical channel with attractive surface interactions and a driving force which varies spatially inside the channel. Using the results of the translocation dynamics of a flexible polymer through an extended channel as control, we first show that the asymmetric shape of the channel gives rise to non-monotonic features in the total translocation time as a function of the apex angle of the channel. The waiting time distributions of individual monomer beads inside the channel show unique features strongly dependent on the driving force and the surface interactions. Polymer stiffness results in longer translocation times for all angles of the channel. Further, non-monotonic features in the translocation time as a function of the channel angle changes substantially as the polymer becomes stiffer, which is reflected in the changing features of the waiting time distributions. We construct a free energy description of the system incorporating entropic and energetic contributions in the low force regime to explain the simulation results.
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