Theory of complexation of polyelectrolytes onto curved surfaces
HAMIDREZA SHOJAEI, MURUGAPPAN MUTHUKUMAR, University of Massachusetts — We have derived analytically the critical conditions for the complexation of flexible polyelectrolytes onto curved interfaces, in terms of the various experimental variables characterizing the interface, the polymer, and the electrolyte condition of the medium. We have used the WKB method and the calculated results will be compared with the previously known results from the variational method. Although the results from both methods are qualitatively similar, the WKB method avoids ad hoc choice of trial functions for the monomer density profile. Implications of our results in the context of experimental situations will be discussed.

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