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Dynamics of Single Polymer Chain in Colloidal Suspensions in Narrow Channels[1] AMIR AMINI, MARC ROBERT, Rice University — The self-diffusion coefficient of a linear polymer in a narrow cylindrical channel is calculated. The Polymer is treated as a Gaussian chain in the external potential established by neighboring colloids considered as hard obstacles. The approach is based on the Kirkwood equation, in which the hydrodynamic interactions are taken into account approximately. Monomer-monomer correlation function is obtained via a self-consistent mean-field method.

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