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Supplemental information

Modeling multiple duplex DNA attachments in a force-extension experiment

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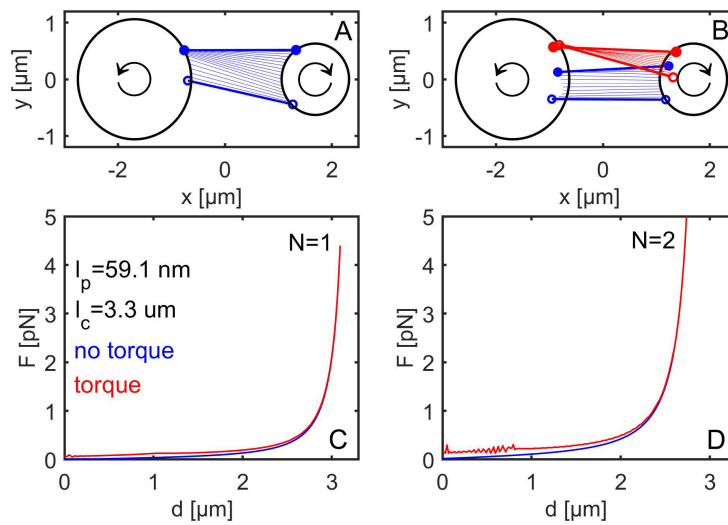


Figure 1: A) Illustration of the effect of counter-torques on a pair of beads in a one spring configuration. The spring is no longer oriented along the x -axis at equilibrium. Similar behavior is seen for a two spring configuration shown in B). This rotation could be expected to produce an excess extension and to modify the resulting force-extension. C) and D) compares force-extensions calculated for the two configurations shown in A) and B), with and without torque applied to the beads. The torque modifies the force-extension, most notably at shorter extensions; this is likely a consequence of the nonlinearity of the spring, and its effect on the restoring torque.