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Relaxation of End-Grafted DNA Chains

By spreading front of a bioadhesive vesicle over stained end-grafted DNA molecules, DNA molecules are stapled into frozen confinement paths. As the conformational relaxation of topologically trapped chain is very slow, it has been shown that the stapled DNA gives access to the local stretching values of individual DNA molecules and provides evidence of self-entanglements. By means of two dimensional computer simulations and scaling arguments, we study the relaxation of single grafted semiflexible chains freely rotating around the grafting point. We provide the auto-correlation of the end-to-end vector for the whole chain and for terminal sections of various lengths.