

Abstract Submitted
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Measuring fluctuations in shear stretched DNAs using site specific labeling ALLEN PRICE, Emmanuel College, Boston, MA, THOMAS GRAHAM, JOSEPH LOPARO, Harvard Medical School, Boston, MA, JOEL EAVES, University of Colorado, Boulder, CO — We report a new technique for measuring the internal dynamics of surface tethered DNAs in shear flow. Previous studies have used end labeling or intercalating dyes which label the entire length of the DNA. Neither prior method can resolve the internal longitudinal fluctuations of the DNA. Our technique accomplishes this by site specific labeling of five sites in lambda phage DNA using EcoRI labeled with fluorescent quantum dots. We used our technique to determine the two point cross correlation functions of the longitudinal and transverse fluctuations of the DNA under shear flow. Our technique allows us to test current models of the non-equilibrium fluctuations of DNA in shear flow in a way previously inaccessible.

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