

## **Anomalous driven motion of biopolymers: stretching, compression and rotational dynamics**

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Recent progress in nanoscale experiments (single molecule observations/manipulations) is revealing a rich variety of fluctuating and anomalous dynamics of biopolymers. Notable examples include the anomalous diffusion of genetic loci in chromosome, and the polymer translocation through a narrow pore, where the memory effect associated with the viscoelastic response becomes important. When driven by external force, these biopolymers exhibit characteristic nonequilibrium dynamics accompanying large conformational distortions. In the presentation, I will first provide a simple scaling argument for a paradigmatic case of the tagged monomer diffusion, and develop it to various nonequilibrium situations such as polymer stretching, compression and rotational dynamics.