

Abstract Submitted
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Mittag-Leffler Correlated Noise and Anomalous Diffusion within a Single Protein Molecule KE-GANG WANG, Department of Physics and Space Sciences, Florida Institute of Technology, Melbourne, FL 32901, DANIEL VIÑALES, MARCELO DESPÓSITO, Departamento de Física, FCEyN, Universidad de Buenos Aires Ciudad Universitaria, Pab.1 Buenos Aires 1428 , Argentina — One of authors (Wang) studied the motion of a particle under the influence of a random force modeled as Gaussian colored noise with arbitrary correlation and with/without external force (Wang et al., *Physica A* **265**, 341(1999)). The generalized Langevin equation, Generalized Fokker-Planck equation, and the variances of displacement, velocity and cross variance between displacement and velocity are obtained in that paper. Recently, Xie et al. (*Phys. Rev. Letters.* **93**, 180603 (2004), **94**, 198302 (2005)) applied the theory developed by Wang to explaining the anomalous diffusion within a single protein molecule. However, in this presentation, we will show that using Mittag-Leffler correlated noise and generalized Langevin equation can more accurately explain the experimental data of autocorrelation function of distance in a single protein molecule.

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