

In the name of God

Department of Physics
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ADVANCED TOPICS IN STATISTICAL PHYSICS II

Exercise Set 3

(Date Due: 1395/01/15)

1. Calculate JPDPF, $p(x(t); x(t + \tau))$, for $\tau = 0, \tau = 1$ and $\tau = 10$. Plot $\Delta(\tau_n) = \sum_{x_1, x_2} |p(x_1(t); x_2(t + \tau_n)) - p(x(t))p(x(t + \tau_n))|$ as a function of τ_n . Do for three kinds of data given in date set II.
2. Compute Markov time scale for data given in date set II.
3. Base on simple algorithm for Two-Point correlation function, calculate two-point correlation of a 1D data set available in date set II for 0, $+2\sigma$ and -2σ features.

Good luck, Movahed
