sity, which is reminiscent of the stochastic resonance observed in the coupled oscillator networks.

F-6(초) 주식 가격은 어느 정도 예측 가능한가?

김상락 (경기대학교 물리학과) 비선형 시계열 분석과 예측 방법들에 의해 주식 가격이 어느 정도 예측 가능한 지를 살펴 본다. 주어진 지나간 주식 시계열 자료들로부터 그 속에 들어 있는 정보를 뽑아내게 되면, 우리는 앞으로 일어날 행위를 예측하는데 도움을 얻을 수 있을 것이다. 현재까지 이루어진 여러 가지 예측 방법들에 대해 소개하고 그 결과를 비교해 본다.

F-7(초) Intermittent Transition to Chaos in Coupled Maps

Sang-Yoon Kim (Kangwon Nat'l Univ.) Using a renormalization method, we study the critical behavior for intermittency in two coupled one-dimensional (1D) maps. We find two fixed points of the renormalization operator. They all have common relevant eigenvalues associated with scaling of the control parameter of the uncoupled 1D map. However, the relevant "coupling eigenvalues" (CE's) associated with scaling of the coupling strength parameter depend on the fixed points. It is also found that the two fixed points govern the critical behaviors in the vicinity of a critical line. One fixed point with no relevant CE is associated with the critical behavior at interior points of the critical line, while the other one with relevant CE('s) is associated with the critical behavior at both ends. These results of the two coupled maps are also extended to globally many-coupled 1D maps, in which each 1D map is coupled to all the other ones with equal strength.

F-P001 Dynamics of a polymer crossing over a potential barrier

Pyeong Jun Park, W. Sung (Pohang University of Science and Technology) We study the dynamics of a polymer escaping from a metastable potential well. Using the multidimensional Kramers theory, escape rate or mean escape time is obtained analytically, which classifies two different regimes of polymer dynamics. It is found that a sufficiently long chain can easily surmount a potential barrier utilizing its internal degrees of freedom.

F-P002 Conformational Change of Polymer-adsorbed Vesicle

Yong Woon Kim, W. Sung (Pohang University of Science and Technology) We investigate polymer-induced shape change of membrane. It is revealed, through grand canonical ensemble approach, that adsorption characteristics play an important role in conformational change of membrane. The polymer attached to one side of a fluid membrane induces a spontaneous curvature proportional to the number of loops, leading to the vesicular budding only for finite temperature range in consistent with the experimental results.

F-P003 Polymer Adsorption on a Fluctuating Membrane

Seung Kyun Lee, W. Sung (Pohang University of Science and Technology) The adsorption-desorption transition of a long polymer chain near an attracting membrane is studied taking into account the fluctuation nature of the flexible membrane. In addition to the Helfrich-type repulsion studied previously[1], the membrane ruggedness effectively causes modification in the polymer-membrane interaction potential, so that the net effect may either be enhancement or suppression of adsorption due to membrane fluctuation. We calculate both effects using perturbative and variational methods to find the condition where one effect dominates the other.

[1]W. Sung and E. Oh, J. Phys. II France 6, 1 (1996)

F-P004 A Study on the Behavior of Simple Liquid

K. H. JUNG (Chonbuk Univ.) A molecular dynamics investigation of the microscopic behavior of a liquid subjected to shearing is carried out.

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