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조직위원회

국형태 (위원장, 경원대)
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한국물리학회 통계물리분과

후원

고등과학원 Open KIAS Program
아시아 태평양 이론 물리센터(APCTP)

http://vortex.phys.pusan.ac.kr/statphys2009/

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CS7 **Repeating patterns from cultured neural networks**
*김준환, 최준호, 이경진(고려대)

CS8 **Incorporation of Quantum Dots into the Lipid Bilayer of Giant Unilamellar Vesicles using Spin-Coating Electroformation.**
*Sung Jin Kim[1], Kyuyong Lee[2], Hyuk Kyu Pak[1] ([1]부산대, [2]한국산업대)

CS9 **Comparison of various fractal measurement methods applied on fractal lattices** *문준영, 김승환 (POSTECH)

CS10 **Noise characteristics of the repressilator system**
*민병준, 고광일, 김인묵(고려대)

CS11 **Uniqueness of the fixed point of the Eigen model and the parallel model under changing environments with sharp-peak fitness function**
Mark Ancliff and *Jeong-Man Park (The Catholic University of Korea)

CS12 **Observation of a colloidal particle dynamics between two parallel walls using oscillating optical tweezers**
*Chungil Ha[a,b], Daniel Ou-Yang[b], Hyuk Kyu Pak[a,b] ([a]Department of Physics, Pusan National University, Busan, Korea 609-735; [b]Department of Physics, Lehigh University, Bethlehem, PA , USA)

CS13 **The Mechanism of Anderson Localization in Disordered Materials**
*Vincent Sacksteder (APCTP)

CS14 **Torus-Doubling in Symmetrically Coupled Period-Doubling Systems**
*김영태, 임우창(아주대), 김상문(강원대)

CS15 **A Novel Method for Numerically Solving a Specific Form of the Wiener-Hopf Equation** *Sheon-Young Kang, Wonju Jeon, and Sang-Hee Lee (National Institute for Mathematical Sciences, Daejeon, Korea)

CS16 **Elastic behavior for head-on collision of spherical nanoclusters**
김상락(경기대)

CS14 Torus-Doubling in Symmetrically Coupled Period-Doubling Systems
*김영태, 임우창(아주대), 김상윤(강원대)

As a representative model for Poincare maps of coupled period-doubling oscillators, we consider symmetrically coupled Henon maps. Each invertible Henon map has a constant Jacobian b ($0 < b < 1$) which is the degree of dissipation. Instead of period-doubling bifurcations, anti-phase periodic orbits (with time shift of half a period) lose their stability via Hopf bifurcations, and then smooth tori, encircling the anti-phase mother orbits, appear. We study the fate of these tori by varying b. Double tori appear via torus-doubling bifurcations for large b. This is in contrast to the case of the coupled logistic maps without torus-doubling bifurcations. With decreasing b, mechanisms for disappearance of torus-doubling are investigated. The torus-doubling phenomena are also observed in symmetrically coupled pendulums.

CS15 A Novel Method for Numerically Solving a Specific Form of the Wiener-Hopf Equation
*Sheon-Young Kang, Wonju Jeon, and Sang-Hee Lee (National Institute for Mathematical Sciences, Daejeon, Korea)

In this paper, we proposed a novel method to numerically solve a specific form of the Wiener-Hopf equation, which arises in the modeling of both neutron and classical radiative transfer from a stellar object. Our method was based on the Clenshaw-Curtis quadrature for the equation. The new method showed more accurate and computationally economical results in comparison with other existing approaches, reported by Graham et al, (1989) and Mastroianni et al, (1997). The present method can be effectively used in the similar integral equations occurring in traffic noise simulation, in diffraction of electromagnetic waves, and in crack problems in elasticity theory.

CS16 Elastic behavior for head-on collision of spherical nanoclusters
*김상묵 (경기대)

The elastic behavior of head-on collision of spherical nanoclusters are investigated using molecular dynamics. We focused on the initial compressing phase of the colliding process. The simulation results are analyzed with Hertz model of elastic balls.