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社團
法人 韓國物理學會

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F-13

The Propagator of the Unbound Quadratic Hamiltonian System. 이 강 구, 연 규 황, (충북대), 엄 정 인(고려대). Using path integral methods the propagator is evaluated explicitly for a time-dependent unbound quadratic Hamiltonian system. We also have obtained two time invariant quantities of the system. One of these invariants determines whether or not the system is bound.

F-14

Universality of Period Doubling in Coupled Maps. Sang-Yoon Kim (Kangwon Nat'l Univ.) We study the critical behavior of period doubling in two coupled one-dimensional maps with a single maximum of order z . In particular, the effect of the maximum-order z on the critical behavior associated with coupling is investigated by a renormalization method. There exist three fixed maps of the period doubling renormalization operator. For a fixed map associated with the critical behavior at the zero-coupling critical point, relevant eigenvalues associated with coupling perturbations vary depending on the order z , whereas they are independent of z for the other two fixed maps. The renormalization results are also confirmed by a direct numerical method.

F-15

New strange attractor in the diode resonator system 신 종철*, 권 숙일 (서울대학교), 김 영준, 김 영태 (아주대학교) In addition to the previously reported period doubling and period adding sequences in the diode resonator system, we have found another new period doubling and chaotic behaviors in the system with very small driving voltage. To characterize its dynamic behaviors, bifurcation diagram, Poincare sections, waveforms and power spectra have been measured. They clearly show successive subharmonic bifurcations to $f/8$, onset of chaos, band merging, noise free window and reverse bifurcations. Good agreements with the logistic map model are given. Numerical results derived from the standard model of the p-n junction diode also give reasonable agreements with the observed results. Importance and physical implication of these results will be discussed in the session.

F-16

Tracking an unstable equilibrium state in the diode resonator system 신 종철*, 권 숙일 (서울대학교), 김 영태 (아주대학교) Dynamical control of chaos using its strong sensitivity to small parameter perturbations has recently been received much theoretical and experimental attention as a possibility to select and