Abstract no: TOD7

ENVELOPING SEMIGROUP OF INDUCED SYSTEM

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Let (X, d) be a compact metric space and f be a continuous surjection on X. The dynamical system (X, f) induces the system $(2^X;\ f_*)$ where 2^X is the set of all non-empty closed subsets of X with the Hausdorff metric.

The enveloping semigroup of (X, f) is the closure of $\{f^n : n \in \mathbb{N}\}$ in X^X with the topology of pointwise convergence. We study some comparison between the enveloping semigroups $E(X)$and $E(2^X)$.

Abstract no. TOD8

DYNAMICS OF PERIODICALLY FORCED SPHEROIDS IN A QUIESCENT FLUIDAT LOW REYNOLDS NUMBER

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In this work, we plan to characterize the topology of dynamics of dilute suspensions offorced particles. A class of technologically important problems say the dynamics of forcedsuspended particles in a variety of flows at low Reynolds number is discussed. As a first step,the governing equations of the dynamics of a periodically forced spheroid in the quiescent fluidat low Reynolds number is formulated, assuming that suspension is sufficiently diluted, wherethe particle-particle interactions are neglected. A system of first order ordinary differentialequates are derived and presented in this paper. A preliminary analysis of the behaviour ofthe dynamics of a spheroid is investigated by performing numerical integration. A varietyof variations of trajectories are observed from the plots. The results show the potential ofthe existence of many types of topologically different behaviours

as the parameters like initialcondition, aspect ratio and magnitude of external force vary. We plan a detailed study of thechaotic and non-chaotic characterization of the system.

Abstract no. TOD9

DYNAMICS ON KHALIMSKY LINE

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We are already familiar with the dynamics of an interval on the Realline.Khalimsky line is the set of integers with the Khalimsky topology defined on it. Khalimsky plane Z_k^2 made up of Khalimsky lines has an important role to play in Digital image processing. The Dynamics of Khalimsky line is intended to be explored in this paper. We see that Tent map is not chaotic on Z_K .Let θ be the set of all odd numbers. A map$f : Z_k \to Z_k$ is chaotic if (i) $\theta \subset O_f(n)$, for all odd n (ii) $\theta \subset P(f)$.