ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

9. Ordinary Differential Equations and Dynamical Systems

1991 MS Classification: 34, 58, 68
Osipenko, George, St. Petersburg State Technical University, Russia
Applied Symbolic Dynamics
New constructive methods for an investigation of global structure of a dynamical system without any preliminary information about the system are proposed. The system is associated with an oriented graph called the *Symbolic Image* which can be considered as a finite approximation of the dynamical system flow. Valuable information about the global structure of the system may come from computer analysis of the symbolic image. Now the applied symbolic dynamics solves the following problems: *Localization of chain recurrent set, Discovery of periodic trajectories with fixed period, Construction of attractors and their domains of attraction, Construction of filtration, Estimation of Liapunov exponents and of Morse spectrum, Test of controllability for control system.*