ICM 1998, Berlin, Aug. 18–27

Abstracts of Plenary and Invited Lectures

Section:

9. Ordinary Differential Equations and Dynamical Systems

1991 MS Classification:
Herman, Michael R., CNRS, Paris
Some open problems in dynamical systems

We will state some open problems in various domains of dynamical systems: Siegel singular disks—Invariant tori for monotone twist maps and monotone symplectic diffeomorphisms—Measure-preserving diffeomorphisms of 2–manifolds—Entropy and exponents—Existence of periodic orbits—Instabilities of Hamiltonian flows on $T^*\mathbf{T}^n$, $n \geq 3$, and the problem of topological stability—The oldest problem in dynamical systems (Newton, Lagange, Laplace, etc.): the topological stability of a classical system of N particles under universal gravitation.
We will quickly survey some of the known results.