ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

9. Ordinary Differential Equations and Dynamical Systems

1991 MS Classification: 58e,

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Intermittent dynamics and symmetry

Intermittent behaviour can be caused by heteroclinic cycles, that means by a set of equilibria $\xi_1, \ldots, \xi_s$ and connecting orbits $u_1(t), \ldots, u_s(t)$, such that $\omega(u_i) = \xi_{i+1}$ and $\alpha(u_i) = \xi_i$, where we compute mod s. Such cycles do not occur in generic flows, however they can be caused by symmetry. We want to explore a specific system which is motivated from geophysics and show that such cycles occur. We observe that our cycle is embedded in a very complicated set. We study its stability and give an interpretation of our results for the motivating problem. Crucial for our analysis is the interplay between dynamics and geometry.