

**Call for papers for special issue: “Robust heteroclinic and switching dynamics”  
for “Dynamical Systems; an International Journal”, published by Taylor and Francis.**

Guest Editors:

Valentin Afraimovich (San Luis Potosi, Mexico)

Peter Ashwin (Exeter, UK)

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Recent work in a number of areas has highlighted the effects of heteroclinic and homoclinic connections within dynamical attractors as being responsible for intermittent and bursting behaviour in nonlinear systems. Such dynamical behaviour appears in models from a wide range of applications including fluid dynamics, population dynamics and neuroscience. Related dynamics has been found in other contexts; for example *unstable attractor networks*, *chaotic itinerancy*, *winnerless competition* and *cycling chaos*.

These attractors present a number of formidable problems that include: identification and structure of such attractors, selection of connections, switching between unstable manifolds for typical trajectories, numerical methods and robustness to perturbations. Moreover, heteroclinic dynamics may serve as an appropriate mathematical framework for transient processes that can be treated as an itinerary past metastable states. Exciting applications in this area include mathematical models of cognitive functions in neuroscience.

We invite authors to submit original research papers to this special issue that address questions in one or more of the following areas:

- Heteroclinic and homoclinic dynamics
- Robust intermittent attractors
- Nonlinear dynamics of perturbed heteroclinic attractors
- Switching dynamics of transient processes
- Applications and examples, for example to winnerless competition dynamics

Dynamical Systems; an International Journal will publish its 25<sup>th</sup> volume in 2010. The primary goal of the journal (published by Taylor and Francis, and founded as Dynamics and Stability of Systems) is to act as a forum for communication across all branches of modern dynamical systems, and especially to facilitate interaction between theory and applications. This journal aims to publish high quality research articles in the theory and applications of dynamical systems, especially (but not exclusively) nonlinear systems.

Pre-submission enquiries are welcome: please address these to any of the guest editors, or to one of the editors-in-chief [P.Ashwin@ex.ac.uk](mailto:P.Ashwin@ex.ac.uk) and [nicol@math.uh.edu](mailto:nicol@math.uh.edu). The deadline for submission is 30th November 2009 and expected date for final decision on manuscripts is end of March 2010. The scheduled publication date of special issue will be summer 2010. Authors should submit their papers via the website <http://mc.manuscriptcentral.com/cdss>