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*Global attractors for non-monotone  
delayed feedback*

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**Abstract**

The dynamics generated by the delay differential equation

$$\dot{x}(t) = -\mu x(t) + f(x(t - \tau))$$

with unimodal feedback is studied. The existence of the global attractor is shown and bounds of the attractor are given. We find attractive invariant intervals and give sufficient conditions that guarantee that all solutions enter the domain where  $f'$  is negative with respect to a positive equilibrium, so the results for delayed monotone feedback can be applied to describe the asymptotic behaviour of solutions. In particular, the existence of heteroclinic orbits from the trivial equilibrium to a periodic orbit oscillating around the positive equilibrium is established. For the Nicholson blowflies equation and the Mackey–Glass equation we determine explicitly the sharpest interval that contains the global attractor for any delay. Several numerical examples are provided to illustrate the main results.

*Joint work with Jianhong Wu and Eduardo Liz.*