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Backward and Forward-Looking Expectations in a Chaotic Cobweb Model

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COLOR FIGURES

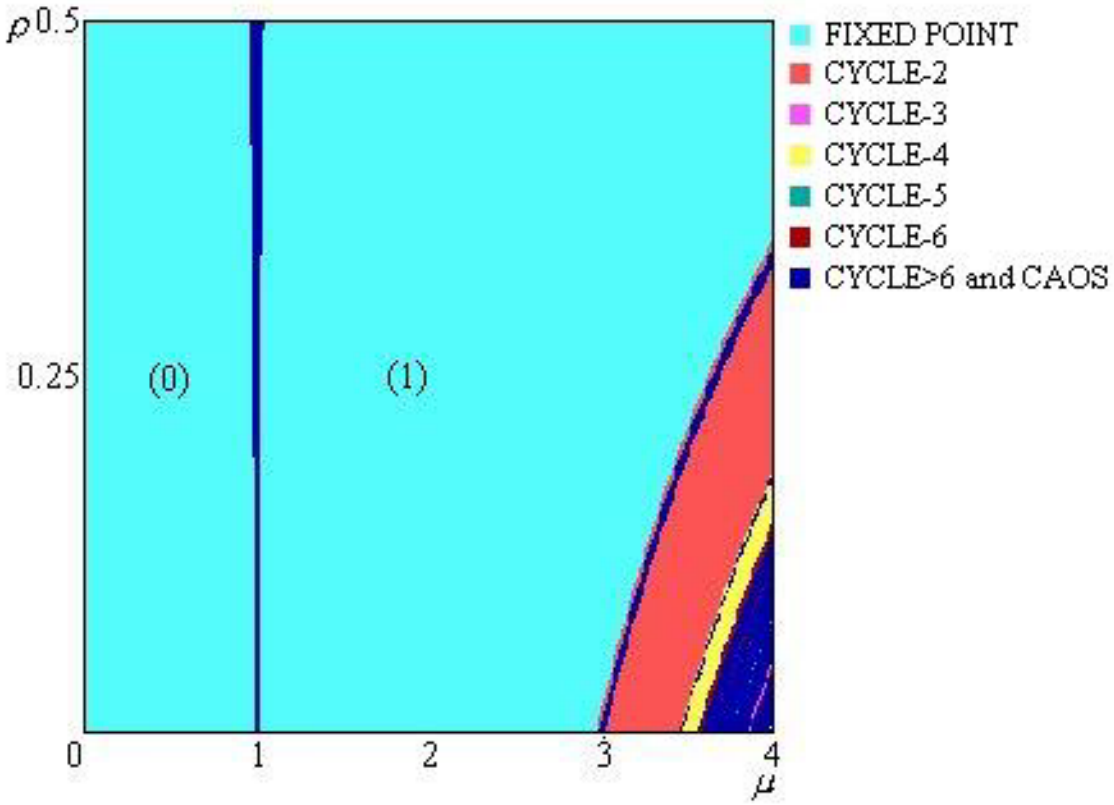

Fig. 1. Diagram of the attractors owned (see legend) on the parameters plane μ, ρ. In region (0) the origin is the only fixed point to be globally stable for memory logistics. In region (1) the positive fixed point is the only attractor. These two regions are divided by curve μ=1 where a fold bifurcation occurs. The cycle-2 region is marked by a curve where a first flip bifurcation occurs and by another curve where a second bifurcation occurs giving rise to a stable cycle 4. We have highlighted in blue the parameter interval where the process produces orbits tending towards cycles whose period is higher than 6 or chaotic orbits. This figure was obtained by generating, $\forall$ point (μ,ρ), a memory-logistics orbit of Eq. 1 so that, after a transitory period of 500 iterations, the colour of the corresponding point indicates the asymptotic behaviour of the map.

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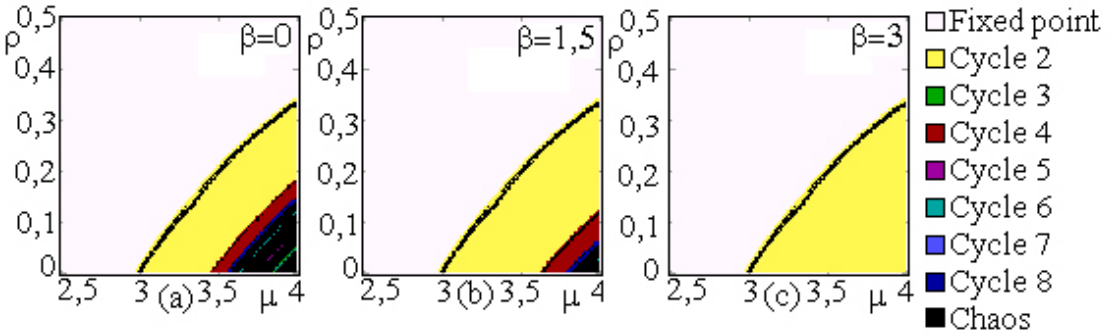

Fig. 5. Attractors owned by Eq. 6 in terms of parameters (μ,ρ) for different values of β, each colour is associated to a different dynamical behaviour.

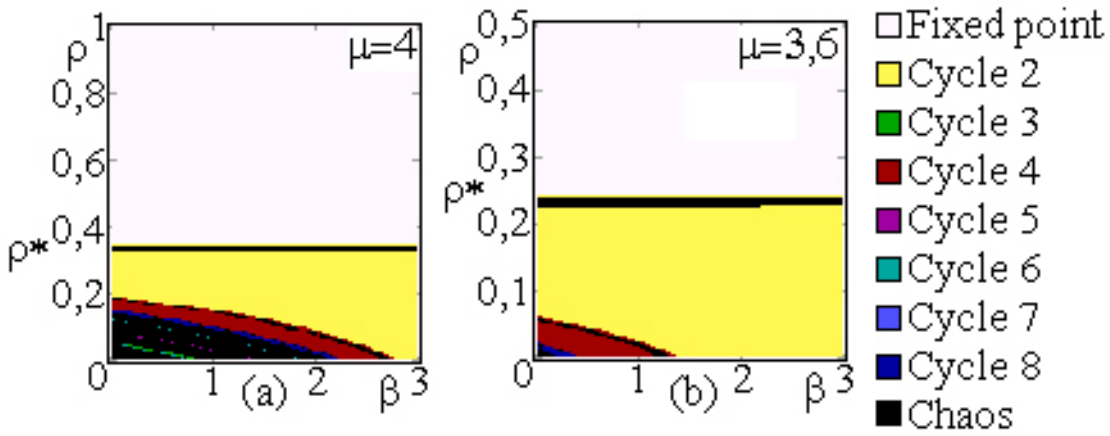

Fig. 7. Attractors owned by Eq. 6 in terms of parameters (β,ρ) for different values of μ, each colour is associated to a different dynamical behaviour (see legend).