

A q-deformed logistic map and its implications

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A new q-deformed logistic map is proposed and it is found to have concavity in parts of the x-space. Its one-cycle and two-cycle non-trivial fixed points are obtained which are found to be qualitatively and quantitatively different from those of the usual logistic map. The stability of the proposed q-logistic map is studied using Lyapunov exponent and with a change in the value of the deformation parameter q, one is able to go from the chaotic to regular dynamical regime. The implications of this q-logistic map on Parrondo's paradox are examined.

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