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Stochastic foraging arena interaction of modified Leslie-type with correlated Brownian motions under regime switching

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Abstract

In this paper we incorporate the white noise and Markovian switching into the modified Leslie-type predator-prey model with foraging arena scheme. Especially, the parametric conditions for the system to be permanent or extinct are investigated. Inspired by (missing citation); (missing citation), we also consider how the correlations between the Brownian motions affect the population interactions. Numerical simulations are carried out to substantiate the analytical results.

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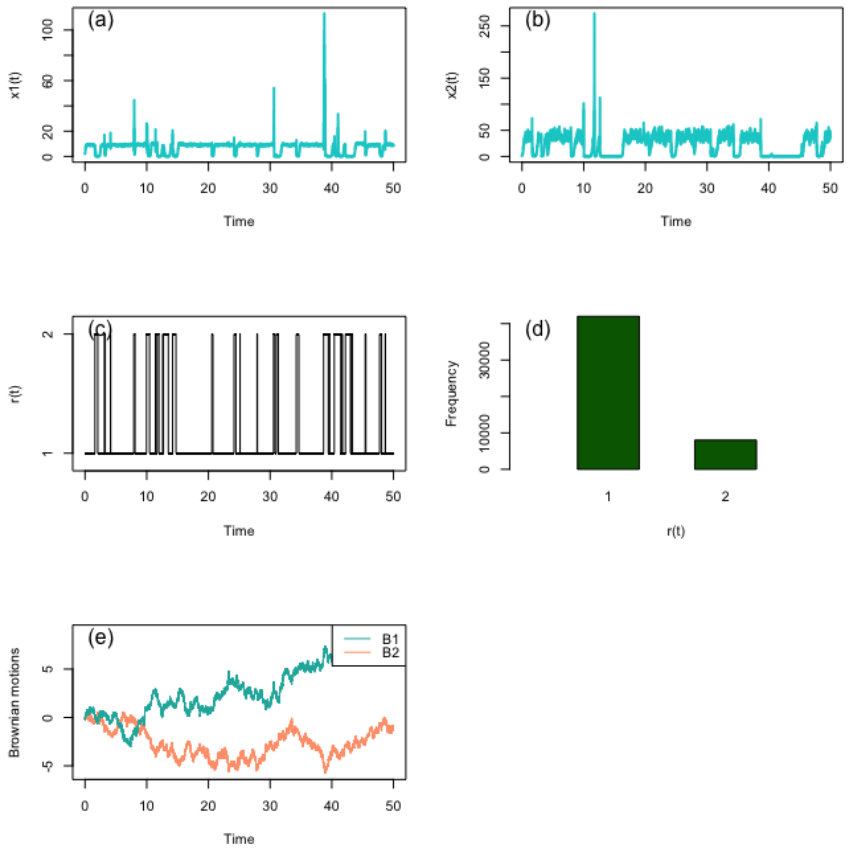

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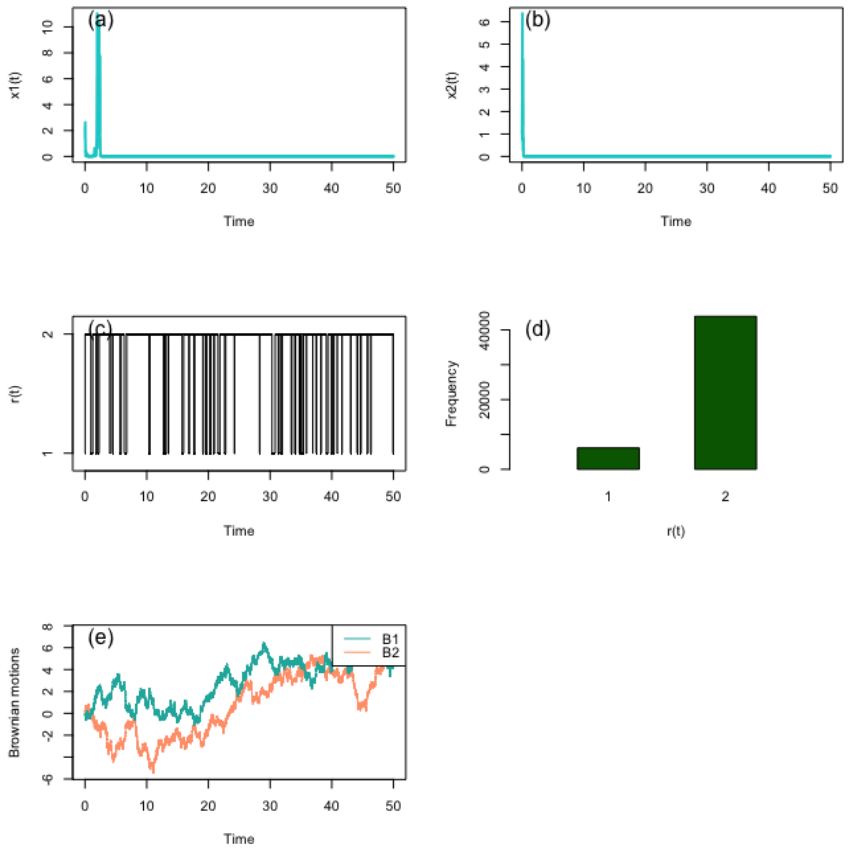

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