Title: System of Stochastic Differential Equations Applied to the Study of Prey-Predator data

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Abstract: In this work, we propose a system of stochastic differential equations to model the prey-predator data. The model is based on the independent Ornstein–Uhlenbeck processes driven by a Gamma process. The independent Ornstein–Uhlenbeck processes is analytically flexible and in addition provides a class of continuous time processes that exhibits long memory behavior. The system of stochastic differential equations is applied to the prey-predator problem by fitting the Ornstein–Uhlenbeck model to the prey-predator data.

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