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Long-time behaviors of a stochastic cooperative Lotka–Volterra system with distributed delay

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Highlights

- 1) A stochastic cooperative Lotka-Volterra system with distributed delay is investigated.
- 2) For the deterministic system, the global stability of the positive equilibrium is proved.
- 3) For the stochastic system with distributed delay, the existence of the stationary distribution is obtained by constructing suitable Lyapunov function.
- 4) The uniqueness of the stationary distribution is established by proving the global attraction of the positive solution.
- 5) The sharp sufficient conditions for the persistence of two species are established.

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