

Stabilization of a Kind of Prey-Predator Model with Holling Functional Response

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摘要 The stabilization problem of a kind of prey-predator model with Holling functional response is investigated. By approximate linearization approach, a feedback control law stabilizing the closed-loop system is obtained. On the other hand, by exact linearization approach, a suitable change of coordinates in the state space and a feedback control law render the complex nonlinear system to be a linear controllable one such that the positive equilibrium point of the closed-loop system is globally asymptotically stable.

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Abstract The stabilization problem of a kind of prey-predator model with Holling functional response is investigated. By approximate linearization approach, a feedback control law stabilizing the closed-loop system is obtained. On the other hand, by exact linearization approach, a suitable change of coordinates in the state space and a feedback control law render the complex nonlinear system to be a linear controllable one such that the positive equilibrium point of the closed-loop system is globally asymptotically stable.

Key words [Approximate linearization](#) [asymptotically stable](#) [exact linearization](#) [prey-predator model](#) [state feedback control](#)

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