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Complexity in a Leslie-Gower Delayed Prey-Predator Model

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Abstract : The complex dynamics is explored in a prey predator system with multiple delays. The predator dynamics is governed by Leslie-Gower scheme. The existence of periodic solutions via Hopf bifurcation with respect to delay parameters is established. To substantiate analytical findings, numerical simulations are performed. The system shows rich dynamic behavior including chaos and limit cycles.

Keywords : chaos, Hopf bifurcation, stability, time delay
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