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Global asymptotic stability in n -species nonautonomous Lotka-Volterra competitive systems with delays. (English) [Zbl 1033.34078](#)

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Summary: A delayed n -species nonautonomous Lotka-Volterra-type competitive system without dominating instantaneous negative feedback is investigated. By means of a suitable Lyapunov functional, sufficient conditions are derived for the global asymptotic stability of the positive solutions to the system. As a corollary, it is shown that the global asymptotic stability of the positive solution is maintained provided that the delayed negative feedbacks dominate other interspecific interaction effects with delays and the delays are sufficiently small.

MSC:

[34K20](#) Stability theory of functional-differential equations

[92D25](#) Population dynamics (general)

Cited in **3** Documents

Keywords:

global asymptotic stability; n -species nonautonomous Lotka-Volterra competitive systems; Lyapunov functional; delayed negative feedbacks

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