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Coexistence for the planar Lotka–Volterra model

We show there exist parameters for which coexistence of the two species in the two-dimensional Lotka–Volterra model holds. The proof borrows many ideas from earlier results obtained recently by Cox, Durrett and Perkins. However, the proof of coexistence in the planar case is more involved than that of greater dimensions. In particular it requires a new convergence theorem for a well-chosen sequence of rescaled Lotka–Volterra models.

This is joint work with Ted Cox, Rick Durrett and Ed Perkins.