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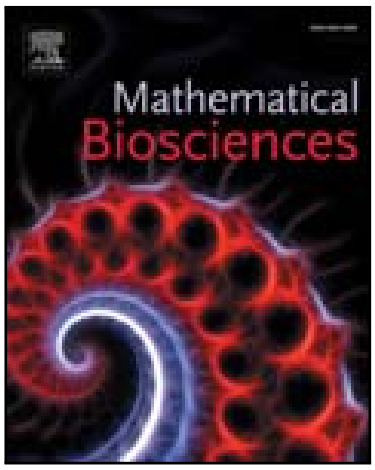

A Discrete Time West Nile Virus Transmission Model with Optimal Bird- and Vector-Specific Controls

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Highlights

- A discrete time model for the transmission dynamics of West Nile virus (WNV) between two bird populations through vectors is presented.
- The model is a refinement of an earlier continuous time WNV model; the refinement follows Lewis et al. (2006).
- The model construction considers the ordering of events and the parameters represent probabilities.
- Optimal control theory is applied to this discrete time model.
- An optimal combination of bird-specific and vector-specific controls is characterized.
- Cost-effectiveness of various control strategies is compared.

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