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Stochastic asymptotic analysis of a multi-host model with vector transmission

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*Highlights (for review)

- We formulate a vector-multi-host epidemic model with a stochastic perturbation.
- The model has a unique global and invariant solution justified by a Lyapunov result.
- Sufficient criteria to assure extinction and persistence is provided.
- We perform a simulation to extend and illustrate the main results.