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Oscillations and complex dynamics in mosquito-borne diseases

In this talk I will introduce a deterministic model to study the impact of limited health resources on transmission dynamics of mosquito-borne diseases by incorporating a nonlinear recovery rate. The model exhibits multi-steady states, and the phenomenon of backward bifurcation as a common feature of vector-borne diseases. Oscillations are discovered and studied in this model, which may help to reveal the recurrence mechanism of mosquito-borne diseases in undeveloped countries.