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Ergodic stationary distribution of a stochastic SIRS epidemic model incorporating media coverage and saturated incidence rate

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Highlights

- A stochastic SIRS epidemic model incorporating media coverage and saturated incidence rate is investigated.
- The stochastic endemic dynamics and ergodic stationary distribution of the stochastic model are discussed.
- Sufficient conditions for the extinction of the disease are established.
- The results reveal that the maximum reduced contact rate, due to media coverage, will accelerates the extinction of infective populations and reduces the risk of epidemic prevalence.