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Persistence and extinction for an age-structured stochastic SVIR epidemic model with generalized nonlinear incidence rate

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Highlights for Review

Persistence and extinction for an age-structured stochastic SVIR epidemic model with generalized nonlinear incidence rate

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- We formulate a stochastic epidemic model with age of vaccination.
- We adopt a generalized nonlinear incidence rate to make model more realistic.
- Two thresholds \tilde{R}_0 and \hat{R}_0 are set to estimate the spread of diseases.
- Sufficient conditions for extinction and two types of permanence are established.
- The linear case and the saturated case fit the main results.

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