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Epidemics of random walkers in metapopulation model for complete, cycle, and star graphs

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#### ACCEPTED MANUSCRIPT

### Highlights:

- Epidemic SIS model is studied on metapopulation networks with several nodes
- We analytically and numerically obtain the solutions of basic equations
- We find the infection density at hub is much higher compared to the other nodes
- However, the epidemic threshold and infection risk are unchanged for any node

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