Network Resilience and Vulnerability

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Background

- Large disastrous perturbation threats the stability of a well-functioning network

- Resilience and vulnerability of a network depends on multiple factors like network topology

Method: Modeling Resilience

- Use directed graph to generalize network topology

- Model perturbation propagation

- Model component behavior

Goals

- Apply model on real-world issues like rushing hour public transportation

- Simulate behavior under large perturbation and analyze robustness and resilience

- Visualization and interpretation