

## **Cascading Failures in Power Grids Coupled to Other Infrastructure Networks**

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Many large infrastructure networks experience cascading failures of one sort or another: traffic networks have traffic jams, viruses spread through the Internet, and continent-spanning power grids fail as a result of small initial disturbances. And sometimes failures spread across heterogeneous networks that are coupled to one another, which can lead to more severe social costs. This talk will discuss the impact of coupling between a power network and a communication network on cascading failure risk. In addition, we will introduce a couple of new computational methods (influence graphs and random chemistry) that can be used to efficiently estimate cascading failure risk in large infrastructure networks and suggest ways that these methods can be used to measure risk in coupled infrastructure networks.