

Control of Complex Systems: An Integrated Perspective on Modern Power Grid Control

Robust optimization of infrastructure networks

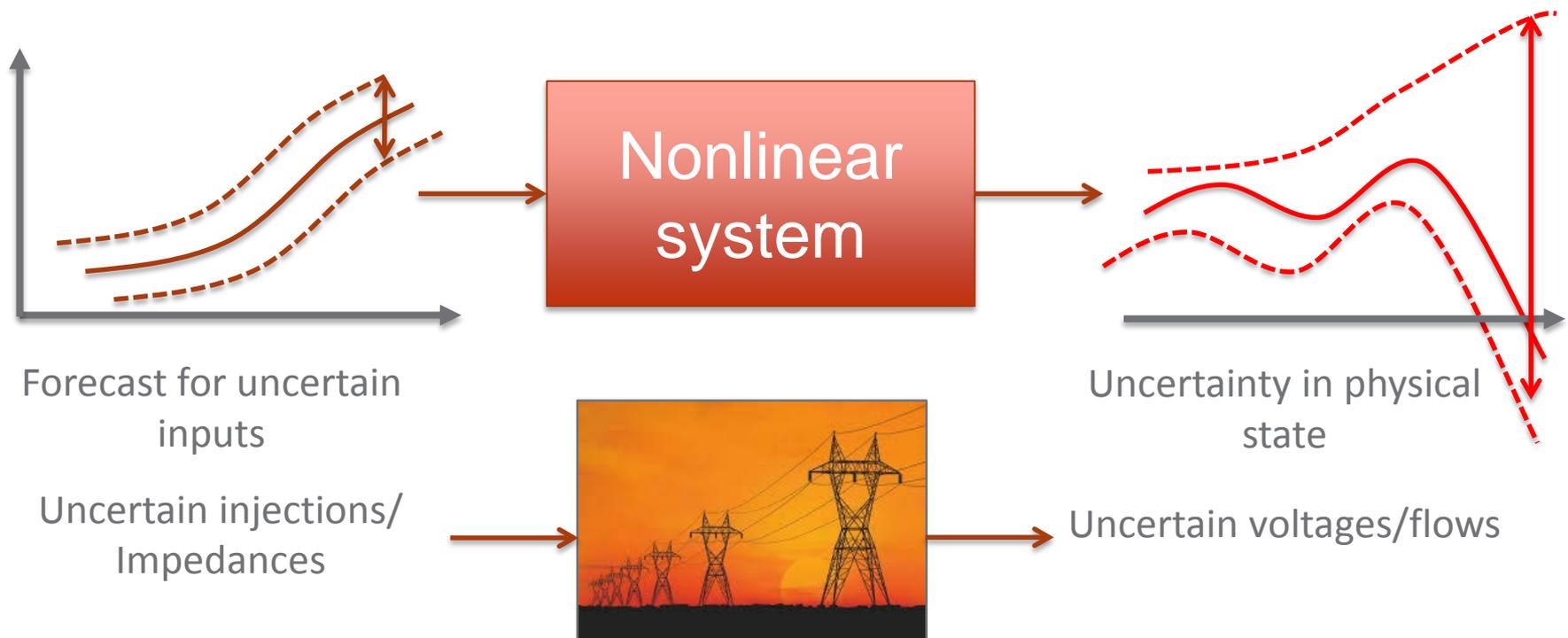
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American Control Conference 2017, Seattle, WA

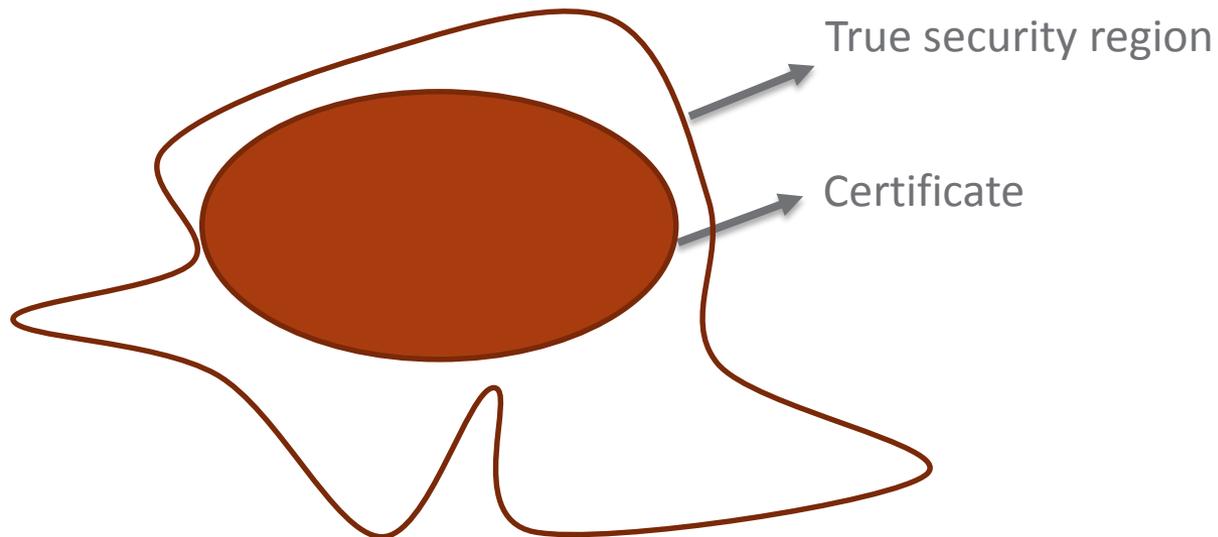
Operating infrastructure networks under uncertainty

Security assessment problem
Ensure system state within limits despite uncertain inputs



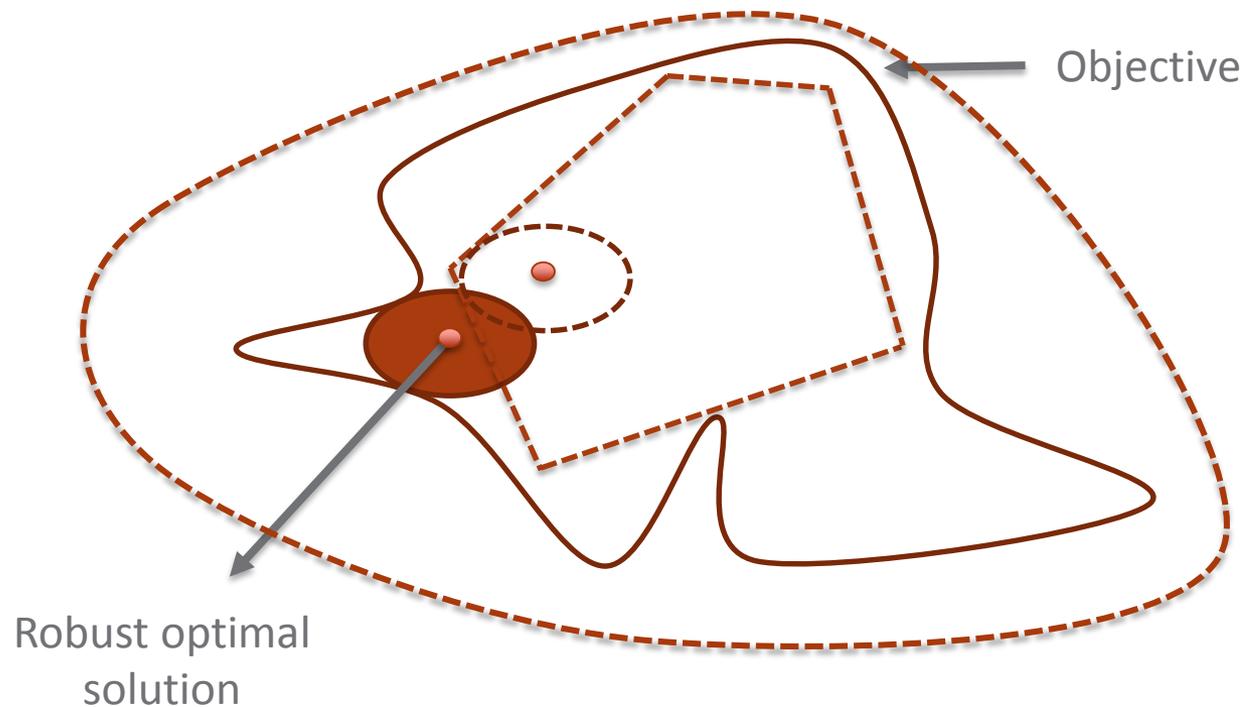
Contribution 1: Certificates for security

Certificate=Easy-to-check condition, guarantees security



Contribution 2: Robust optimization

Choose control inputs so that system state remains within limits for all realizations of uncertainty



Questions?



Haoxiang
Yang



Benjamin
Rapone



Hung
Nguyen



Kostya
Turitsyn

<https://arxiv.org/abs/1703.08881>

<https://arxiv.org/abs/1705.05774>

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