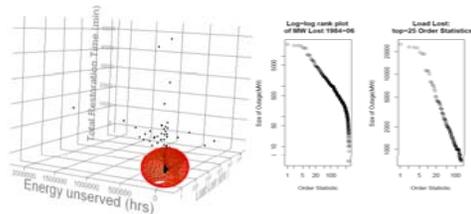
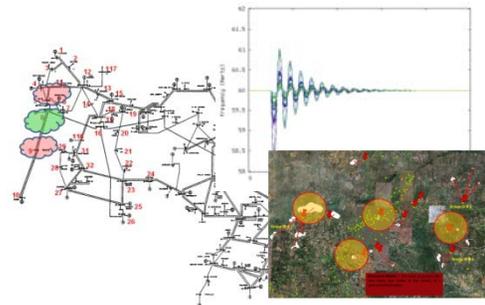


Modernizing the Electric Grid



Societal, Economic, Resource Drivers Data (e.g., Renewables Penetrations)



Data-Analysis and Evaluation



Quantifying policy optimizing across grid constraints

Problem Statement:

- Smarts in the electric grid are a necessary component to make it self-healing and reliable
- Creating a capability to evaluate and analyze a changing grid in a joint resource-, infrastructure-, and policy-aware manner is an outstanding gap

Technical Approach:

- Middlewares for data collection and analysis, and communication and control of electric grid behaviors
 - The overlay spans wide-area generation and transmission analysis to distribution circuit resolutions
 - It stores and evaluates static characterizations as well as real-time data from the grid.
 - It then processes them in analytical modules that couple resource constraints, power system models, and requirements into an optimization harness

Benefit:

- Our approach supports a more adaptable grid allowing designers and analysts to compare architectures and optimize approaches for modernization and grid sustainability

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