Akshay Sriprasad
Peak Demand: Forecasting & Optimization

Peaking Power Plant owned and operated by Wolverine Power Co-op, MI

Electric Reliability Council of Texas (ERCOT) Day-Ahead Settlement Point Prices (8/29/11)

Nonlinear Autoregressive with Exogenous (NARX) Model

Historical Load Data

Input

Output

Neural Network including connections (called weights) between neurons

Adjust weights

Historical Weather Data
- Hourly Dry Bulb T
- Hourly Relative Humidity

Previous Values of Load

Load Forecast for 5-home cluster in the Mueller Community (10/12/12)
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Kinetic Battery Model

ERCOT DAM SPP

24 hour load forecast

Battery

Grid

Homes

q1

q2

q3

Dynamic Optimization

Energy Cost Savings----CES Scaling Optimization----PV Peak Value Analysis