Engineering Analysis
Task Team

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Objective: Document industry advancements in model validation and calibration
Outline & Progress

- Drafted sections 2.1 and 3.1
- Collected material for section 3.2.2
- Conducted literature review for sections 2.2, 3.2.1, and 3.3
Section 2.1: Enhanced Model Validation

- Presently, typically the user assesses the accuracy of the model validation
- Need for automation and robustness of model validation
  - Need for methods to verify validity of model and/or parameters
  - Need for comprehensive and interpretable performance metrics
Section 3.1: Advanced Parameter Selection

It is beneficial to identify sets of parameters with strong and linearly independent effects across qualitatively different disturbances, and to identify the “best” disturbances to use for model tuning.

1. Trajectory Sensitivity Approach
2. SVD Based Methods
3. Similarity Based Methods

Fig. 5. Spiral graph showing magnitude and dependency of parameter sensitivity [32].