



# Engineering Analysis Task Team

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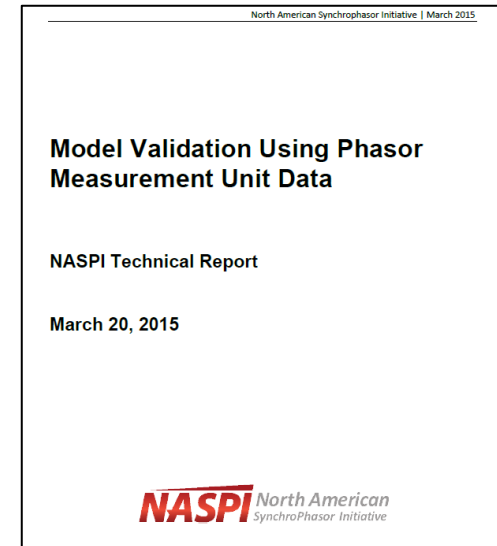
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NASPI Virtual Meeting

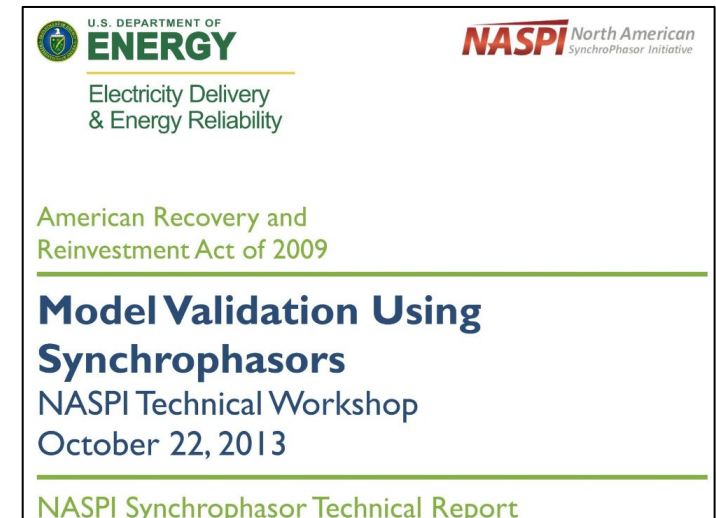
October 6 2021

# Advanced Model Validation & Calibration

- EATT White Paper
- Lead: Honggang Wang (GE)



**Objective: Document industry advancements in model validation and calibration**



# Outline & Progress

[White Paper Link](#)

- 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

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# Section 2.1: Enhanced Model Validation

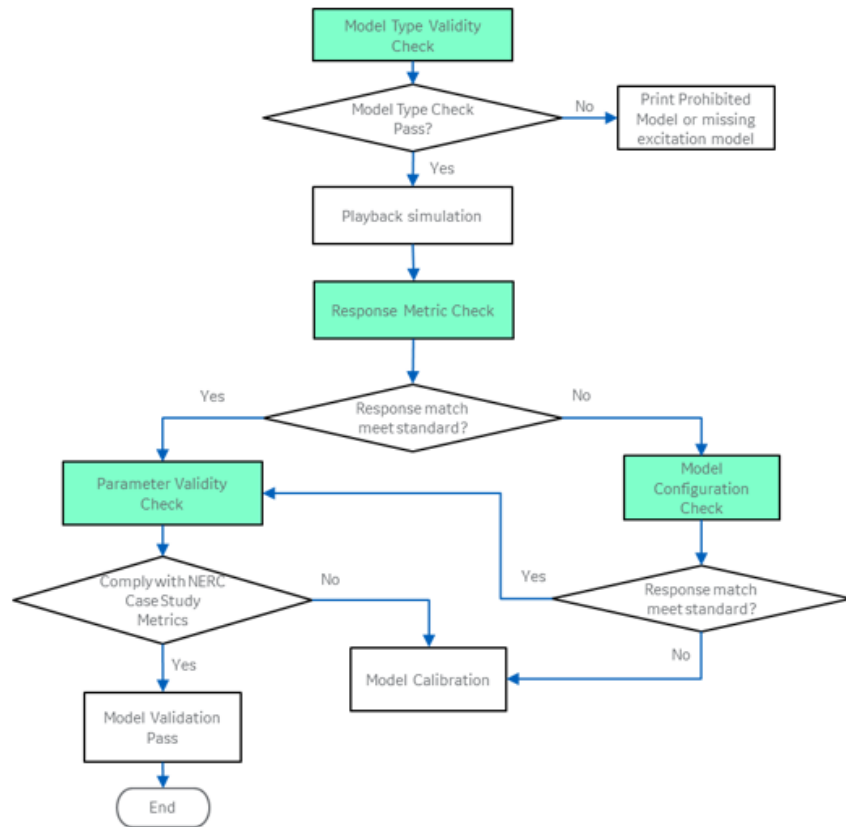


Fig. 6: Enhanced Model Validation Process from GE [32]

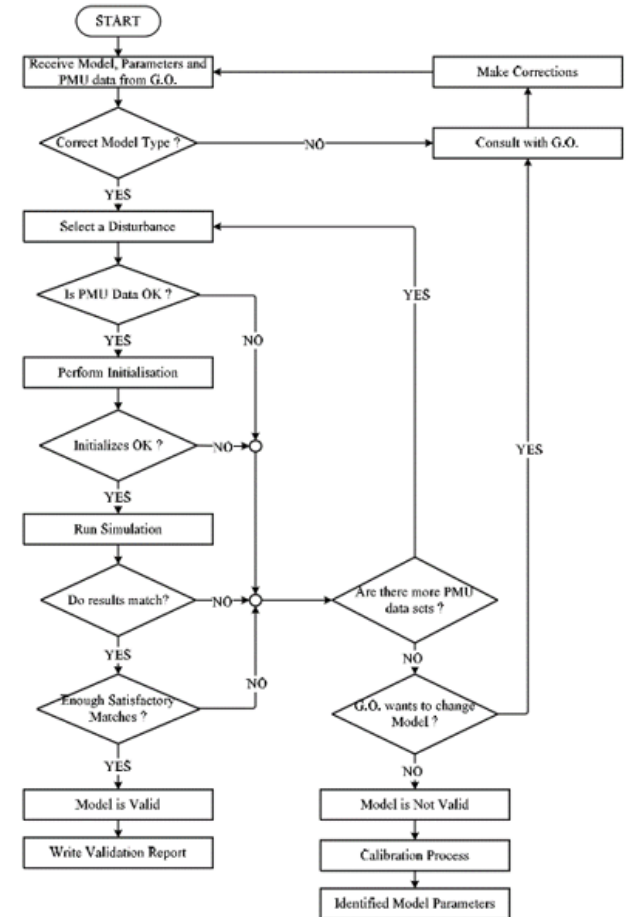


Fig. 8: Enhanced Model Validation Process from EPG [36]

- 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**

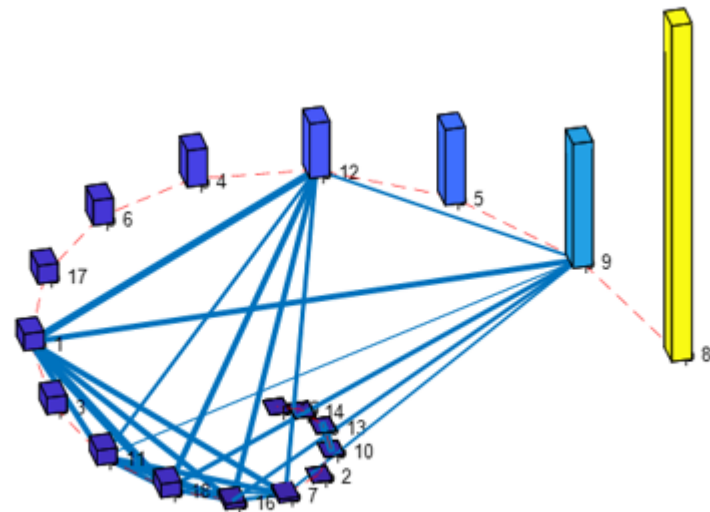


Fig. 5. Spiral graph showing magnitude and dependency of parameter sensitivity [32].