



**NASPI TECHNICAL WORKSHOP  
SYNCHROPHASOR DATA AND STATE ESTIMATION  
MARCH 25, 2015  
8:00 am to noon**

San Mateo Marriott  
1770 South Amphlett Blvd.  
San Mateo, California 94402  
650-653-6000

The purpose of this technical workshop is to explain the basics of state estimation (purpose, analytical techniques, etc.) and the ways that state estimation is changing with the availability of synchrophasor data. Following a technical introduction and overview of state estimation, we will receive briefings from industry practitioners on how they are implementing state estimation using synchrophasor data, including lessons learned. We will close with a discussion of considerations and complications relating to the use of synchrophasor data for state estimation.

There will be no fee for this Technical Workshop but you must register in advance using the workshop [here](#). This workshop is being presented by the North American SynchroPhasor Initiative in conjunction with NASPI's March Work Group meeting; if you wish to attend the NASPI meeting, you can register for it [here](#) and pay the associated \$300 advance registration fee (with a \$100 late fee after March 9).

The NASPI Work Group meeting and the Technical Workshop will be held at the San Mateo Marriott, which is close to the San Francisco International Airport.

**DRAFT AGENDA 3/12/15**

- 8:00 am      Introduction
- 8:10 am      Overview of state estimation – Evangelos Farantatos (EPRI)
- Purpose, associated infrastructure and uses of state estimation
  - Formulation, modeling and solution algorithms used (options, pros and cons)
  - How PMU data changes state estimation (formulation, modeling, algorithms, architecture)
  - PMU-only state estimation
  - Static v. dynamic state estimators
  - Centralized v. distributed state estimation architectures

- 9:10 am Using PMU data to validate a state estimator
- ERCOT -- Sarma (NDR) Nuthalapati
- 9:20 am Hybrid state estimation – combining SCADA and synchrophasor data
- MISO – Kevin Frankeny
  - NYPA – George Stefopoulos
  - PJM – John Baranowski
- 10:05 am Break
- 10:20 am Linear state estimation
- Dominion Virginia Power – Kevin Jones
  - PJM – Shaun Murphy
  - V&R Energy – Marianna Vaiman
- 11:20 am Challenges related to state estimation using synchrophasor data
- Data quality and the impact of bad data on state estimator solutions– Ryan Nice, Shaun Murphy and John Baranowski (PJM)
  - Research perspective -- Bilgehan Donmez (ISO-NE), Ali Abur & Murat Gol (Northeastern University)
- Q&A
- Noon Adjourn