SweGRIDS

**Improved observability in the power system:**
Rotor angle measurements and support from faster voltage control.

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Background: Stability and Rotor Angle Oscillation
Measurements

Rotor Angle measurement

Voltages and Currents measurement
A single code was designed to estimate the wanted variables. The code can be divided into three sections:

- Rotor angle calculation;
- Inertial contribution calculation;
- Estimation of Moment of Inertia.
A frequency dip of around 0.8% was measured.

The rotor angle oscillation was estimated using the flux speed.
Using the electrical frequency and its derivative, it was estimated:

\[ \text{Inertial Contribution} = -P_{\text{iner}} \]

\[ P_{\text{turb}} = P_{\text{gen}} + P_{\text{iner}} \]

\[ \text{Moment of Inertia } J(t) \]
THANK YOU!

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