

Strategic PMU Placement for Secure and Resilient Power Grids

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Introduction

- Power grids deliver power from generators to loads
- Phasor Measurement Units (PMUs)** provide **time-synchronized** voltage and current measurements

Objectives

- Minimize total cost
- Maximize observability
- Accounting for critical nodes (CNs) and zero-injection buses (ZIBs)

Methods

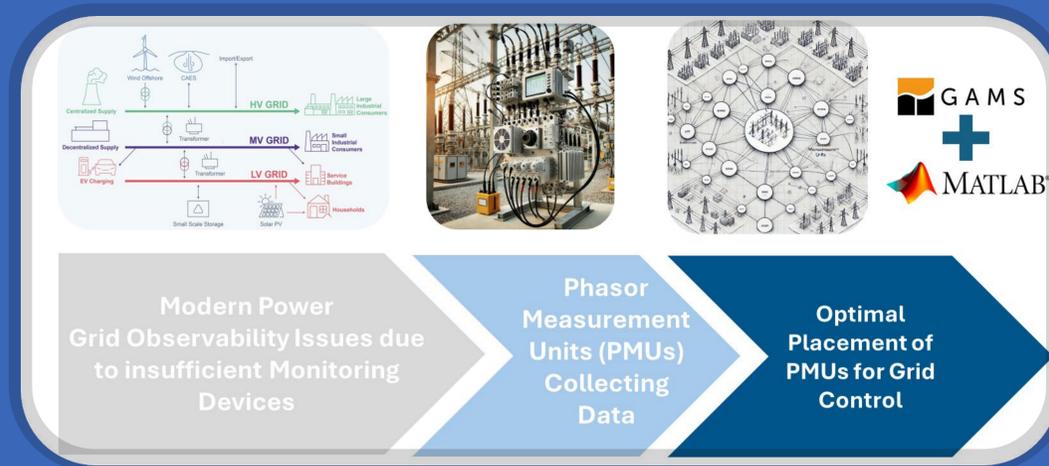
- Integer Linear Programming - **GAMS**
- IEEE bus systems - **MATPOWER**

The Electric Grid's Secret Eyes: How Strategic PMU* Placement Transforms Grid Awareness

*PMU: Phasor Measurement Unit



For more details about this work!!



Results

- IEEE-30: $N_{PMU} = 8$
- IEEE-57: $N_{PMU} = 13$
- IEEE-118: $N_{PMU} = 31$

