

Introduction

Our SE+-based DSSE algorithm introduces significant innovations to enhance accuracy, stability, and efficiency. By leveraging advanced techniques like compressive sensing and a novel norm-0 objective function, our approach ensures precise and non-divergent estimations, even with limited and noisy data.

Key Features

The SE+ algorithm achieves accurate state estimation using compressive sensing on linear residual equations without approximate linearization. This enhances efficiency by directly selecting and cleaning basis sets for both linear and nonlinear regression problems. Phasor Measurement Units (PMUs) provide real-time, high-precision data, while data fusion integrates information from PMUs, SCADA, and other sensors, increasing the robustness and reliability of our estimations.

Conclusion

Our SE+-based DSSE algorithm delivers superior state estimation for power distribution systems, significantly enhancing accuracy, reliability, and efficiency through advanced techniques and real-time data integration.