

Combining Quantitative Soiling Detection and Thermography for Improved Solar Field Performance Optimization

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Summary:

Introduction of our advanced methodologies for detecting and quantifying soiling in photovoltaic systems using drone-based imaging and automated analysis. We present a novel approach that integrates thermographic inspection in combination with quantitative soiling assessment to evaluate energy losses and optimize solar farm performance. Key topics include the correlation between soiling patterns and thermal anomalies, digital twin modeling for predictive maintenance, and data-driven strategies for cost-effective cleaning and efficiency maximization.