

KEY TAKEAWAY:

In-situ I-V enables measuring actual power losses due to soiling

Key Points

- We demonstrate methods for measuring actual soiling power loss in bifacial systems using in-situ module I-V
- Method 1, Module-Module: Uses $P_{\max}$ of a soiled module vs. I_{sc} of a regularly cleaned module
- Method 2, Module-Cells: Uses $P_{\max}$ of soiled module vs. combined front and rear manually cleaned reference cells total effective irradiance

Benefits of Module-Cell:

- Cell cleaning is less labor intensive and can be automated for future setups.

Results

- Both methods show good agreement over 1 year.

Benefits of In-Situ I-V

- Enables soiling assessment on active modules within the array.
- Provides an accurate picture of soiling impact on power.

Acknowledgements

- Thanks to EDF for the field test site and research partnership

Scan QR Codes For More Details

Our EUPVSEC
2023 Paper



Impact of
Soiling on Power

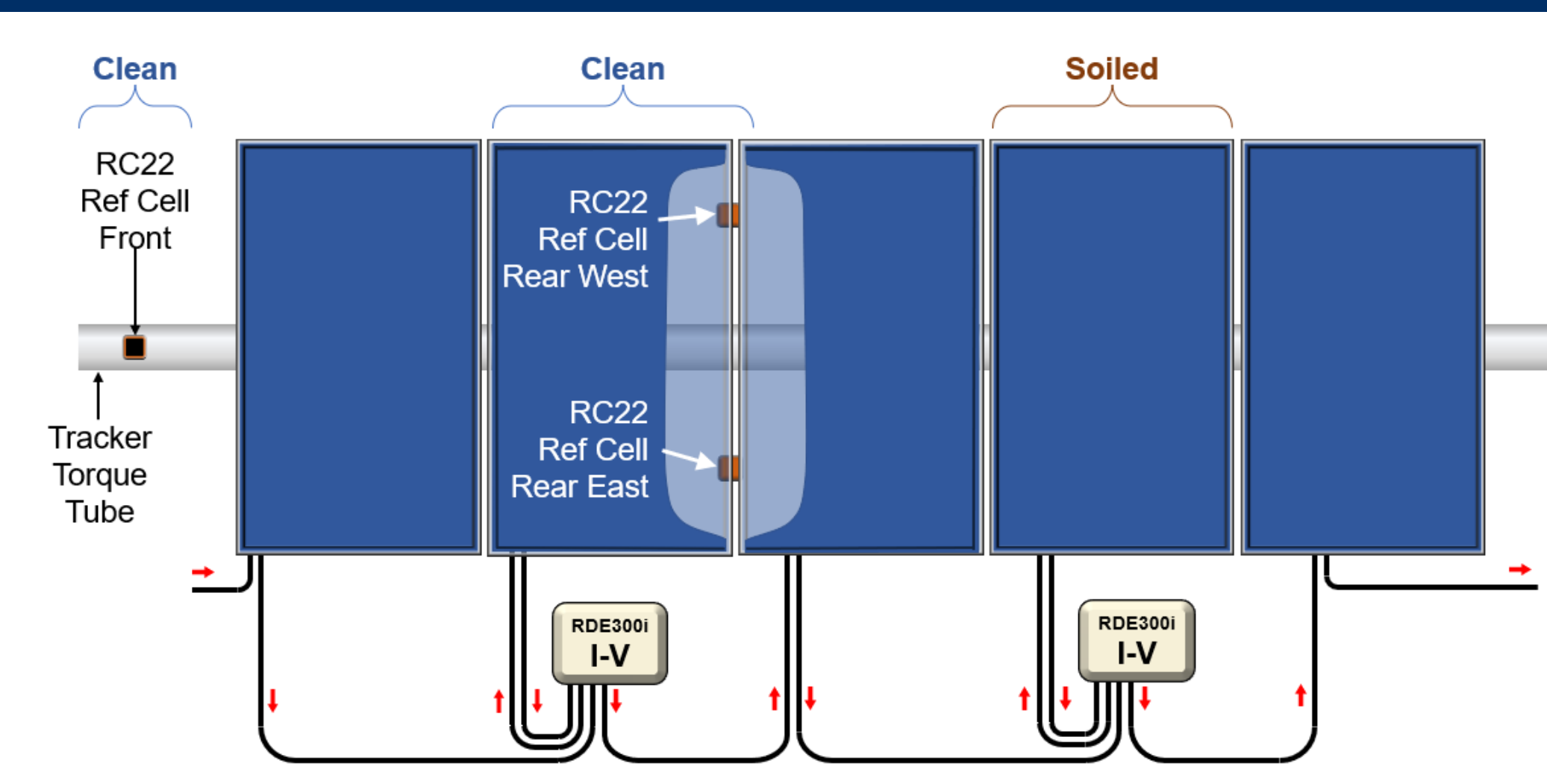


Compare
Methods



2024 PVSC Paper in Progress !

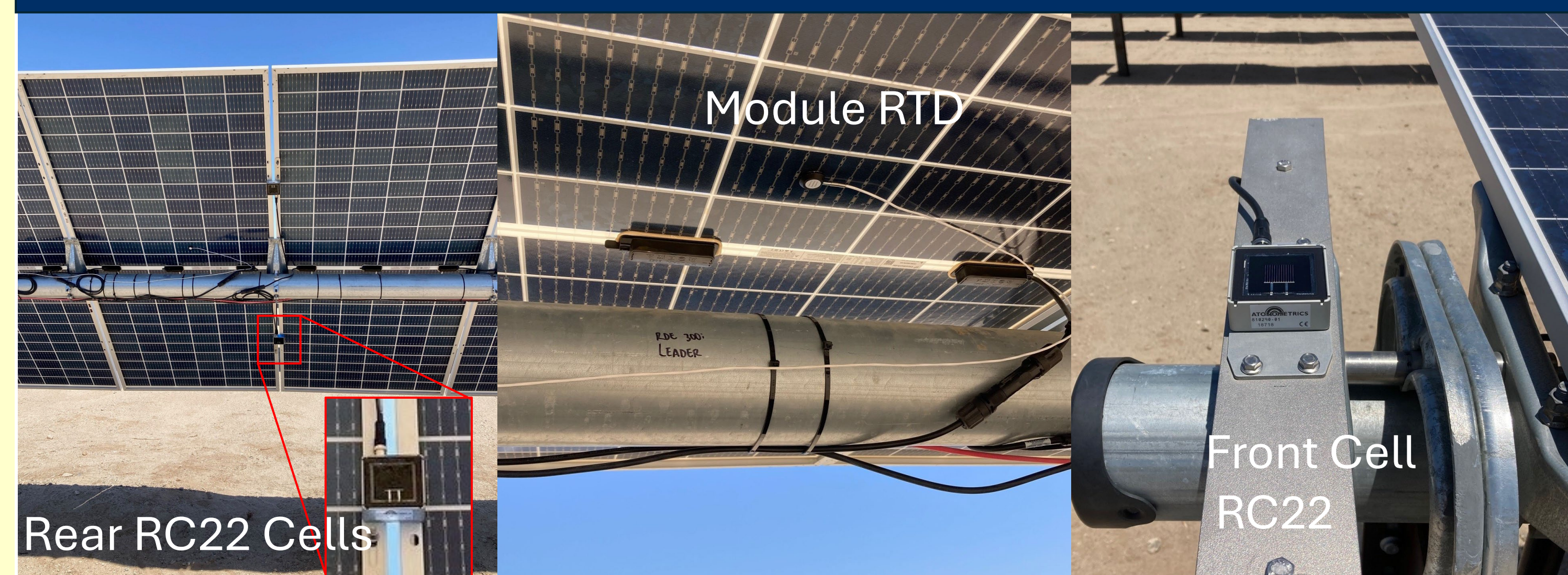
Setup



1: Module-Module: Soiled Module vs. Clean Module

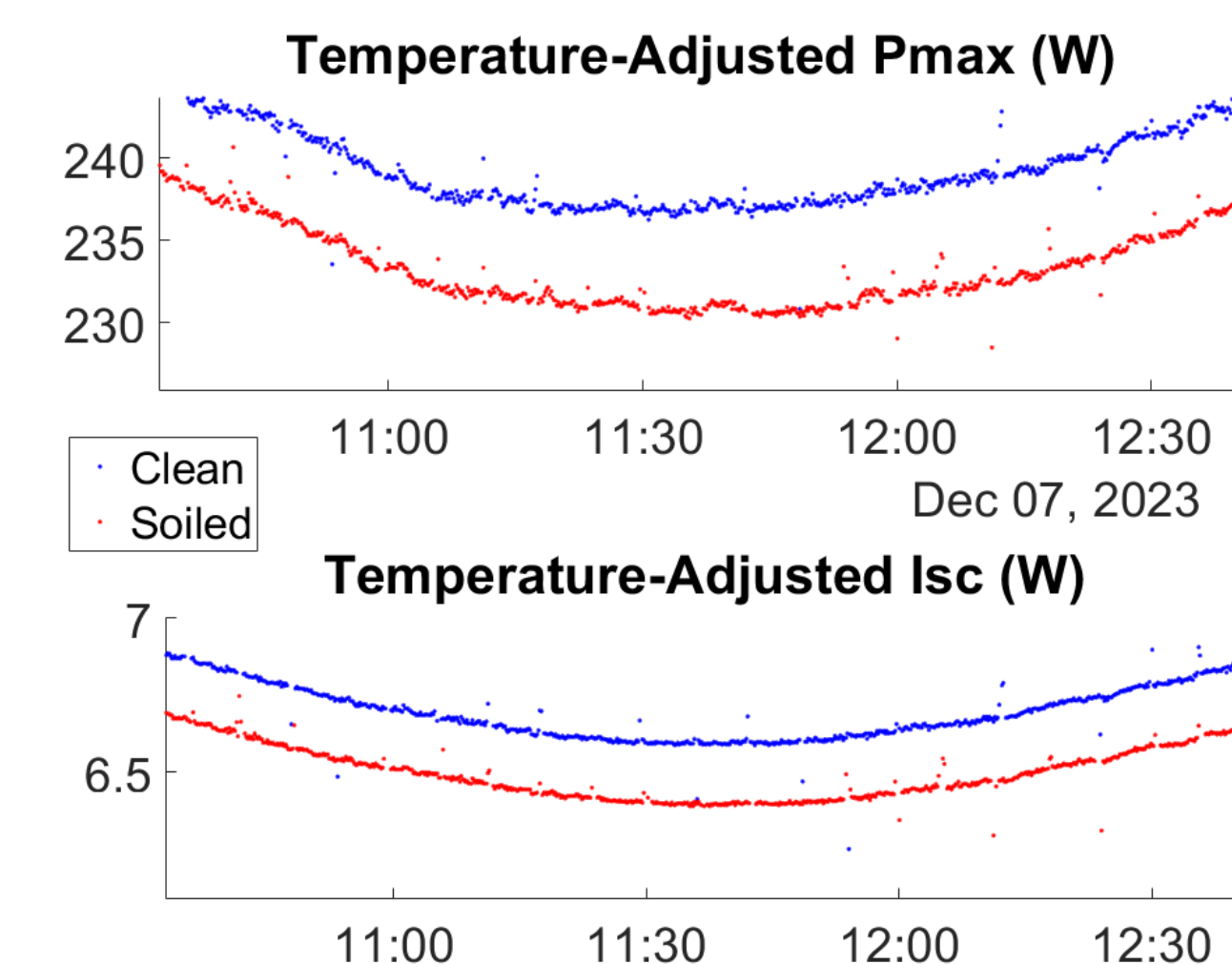


2: Module-Cells: Soiled Module vs. Clean Reference Cells



Results

Power Loss
on Soiled
Module



Cell Washing Can Be Automated



Methods
Agree, Using
Clean Module
or Clean Cells
as Reference

