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IN SITU MONITORING OF ELECTRICAL PARAMETERS OF PV MODULES UNDER MECHANICAL STRESS

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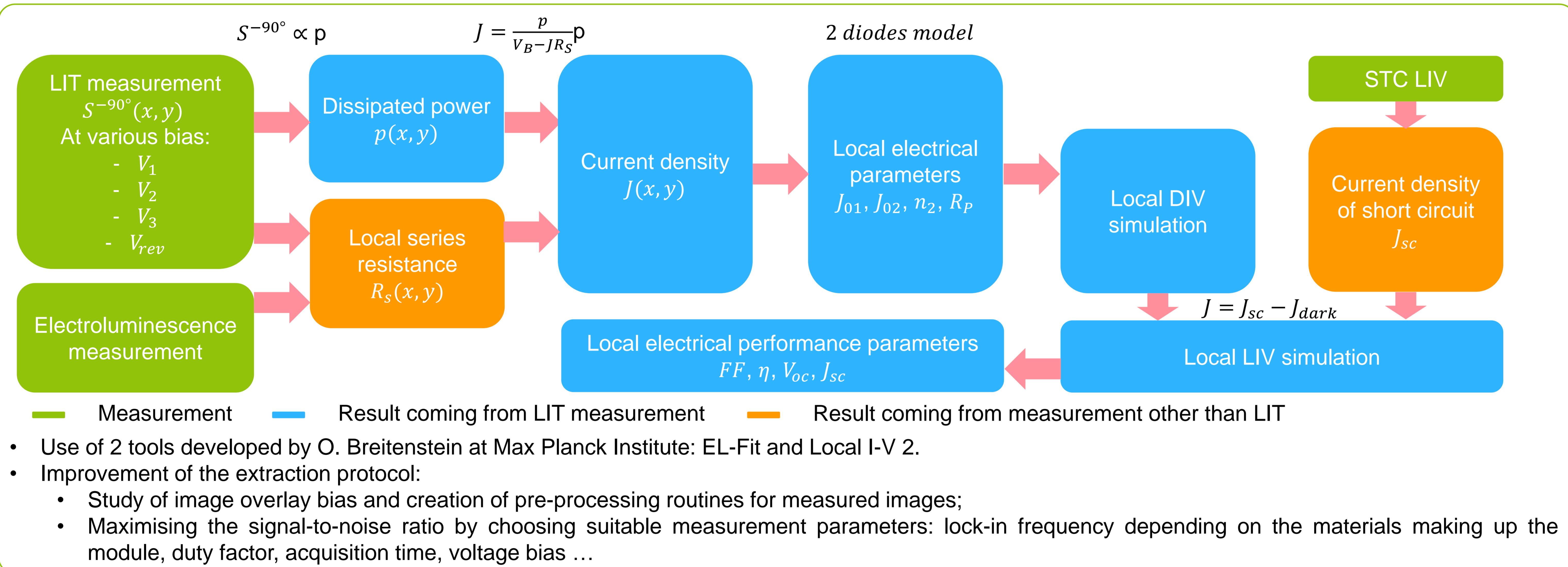
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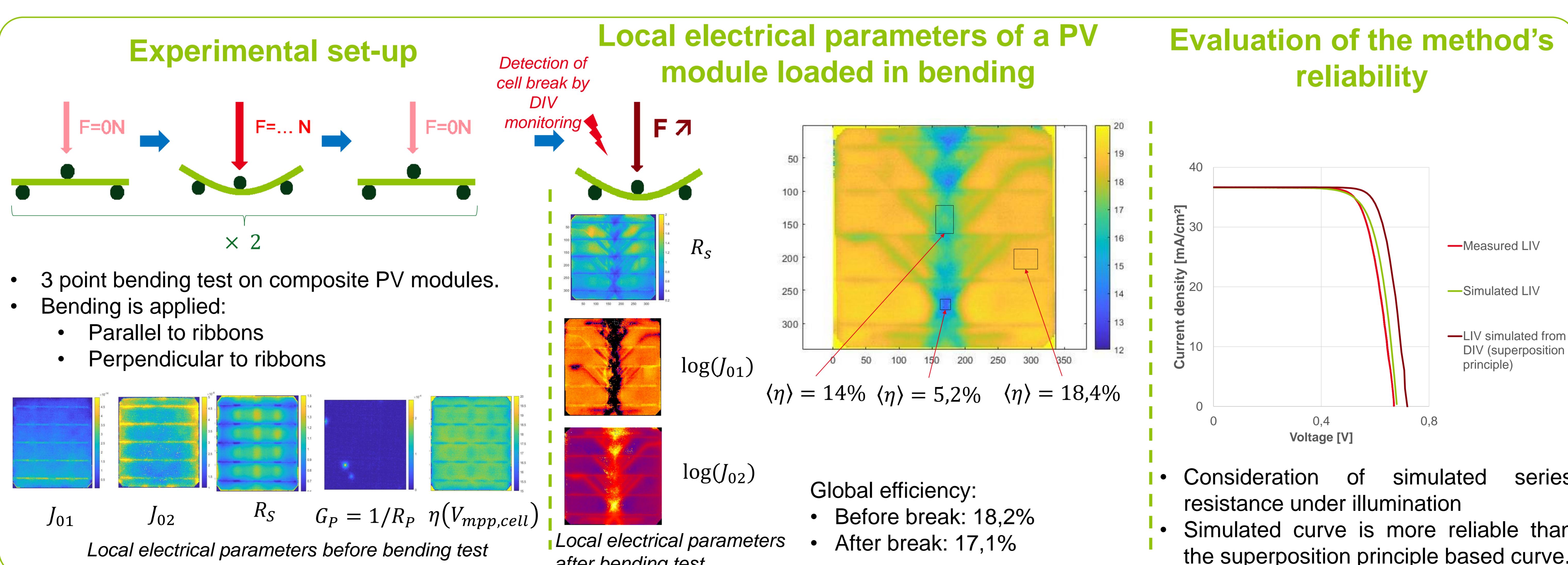
CONTEXT AND AIMS OF THE STUDY

- The global electrical parameters of a module under mechanical stress, measured by dark I-V (DIV), vary. → Research into the local electrical behaviour of the module is of interest. Electroluminescence (EL), lock-in thermography (LIT) and light I-V (flash test / STC LIV) measurements can be used to have a deeper understanding of local electrical phenomena.
- Aims of the study:
 - Adaptation of a protocol for extracting local electrical parameters;
 - Extraction of the local electrical parameters of a mechanically loaded photovoltaic module.

PROTOCOL OF EXTRACTION OF LOCAL ELECTRICAL PARAMETERS



APPLICATION OF THE PROTOCOL ON THE CASE OF PV MODULES LOADED IN BENDING



CONCLUSION

- Improvement and use of a method for the electrical analysis of a module at local level
- Enables the physical cause of a fault to be determined: electrical or not? And if electrical, caused by diffusion, recombination, shunt, series resistance?

PERSPECTIVES

- Application of the method to support the development of new cells, interconnections or module technologies.
- May be used for the monitoring of electrical defects for various ageing tests.