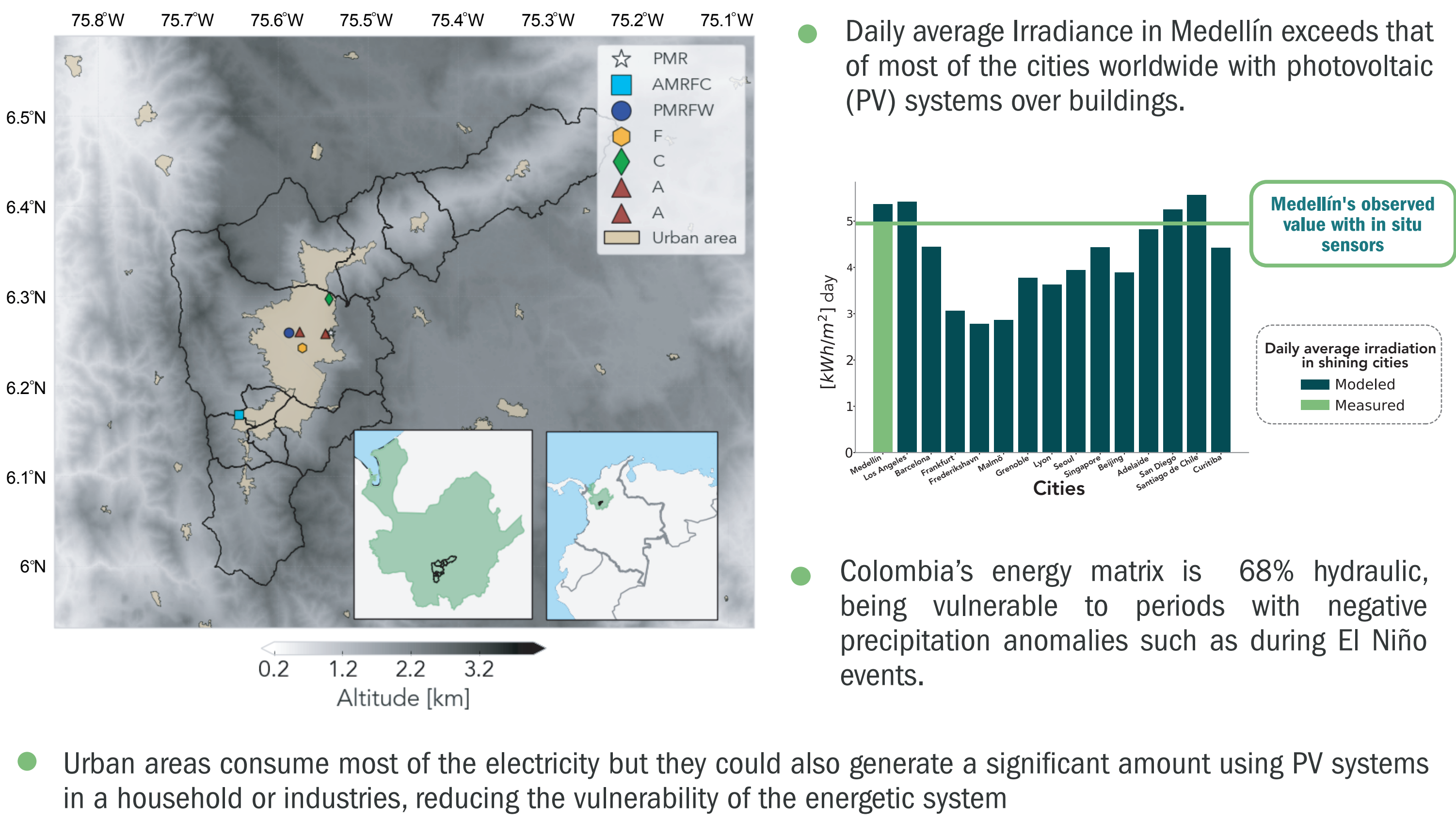


Weather Effects on the Efficiency of Photovoltaic Systems in Medellín, Colombia

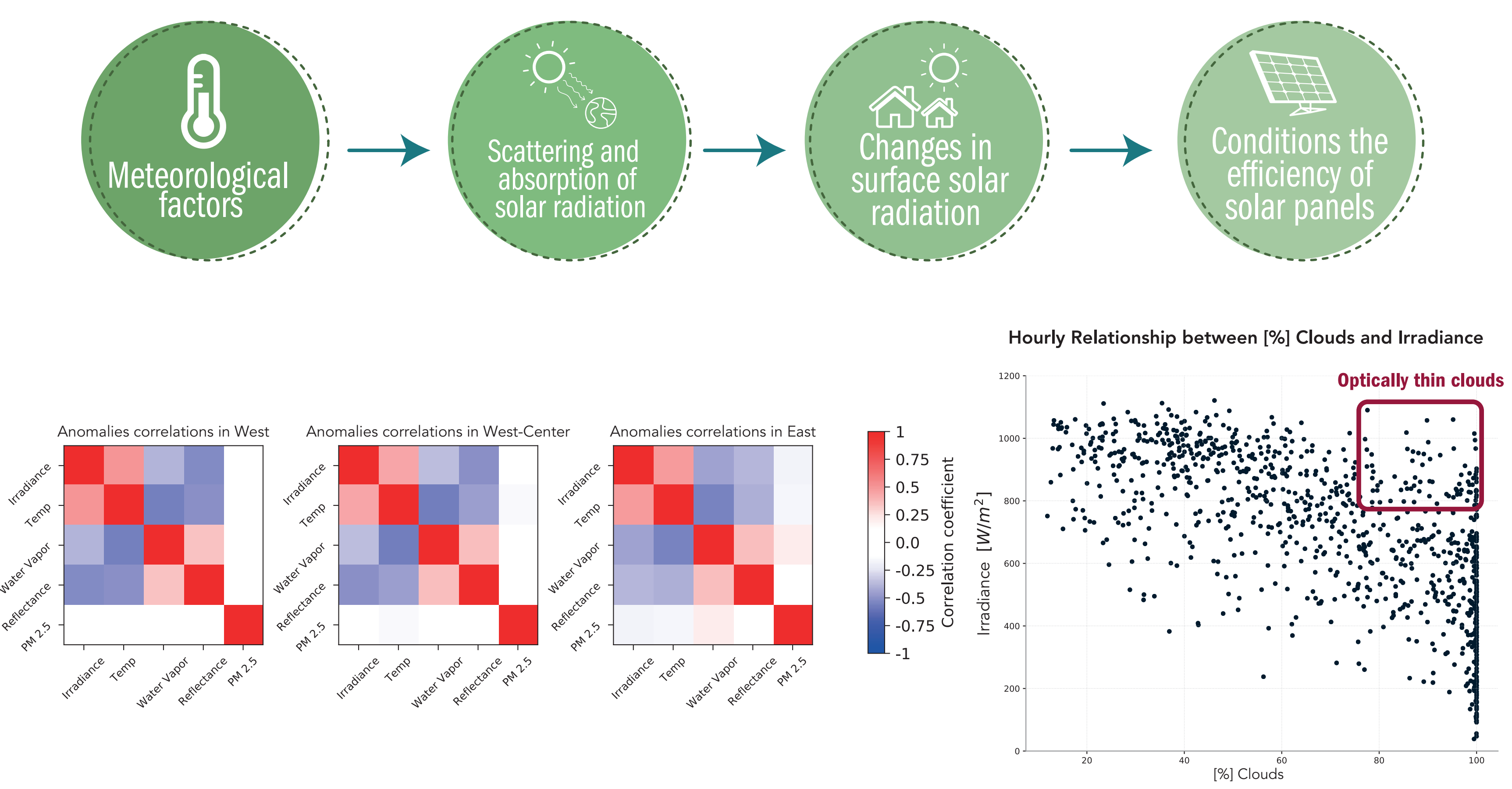
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1.Sistema de Alerta Temprana de Medellín y el Valle de Aburrá2.Universidad Nacional de Colombia, sede Medellín

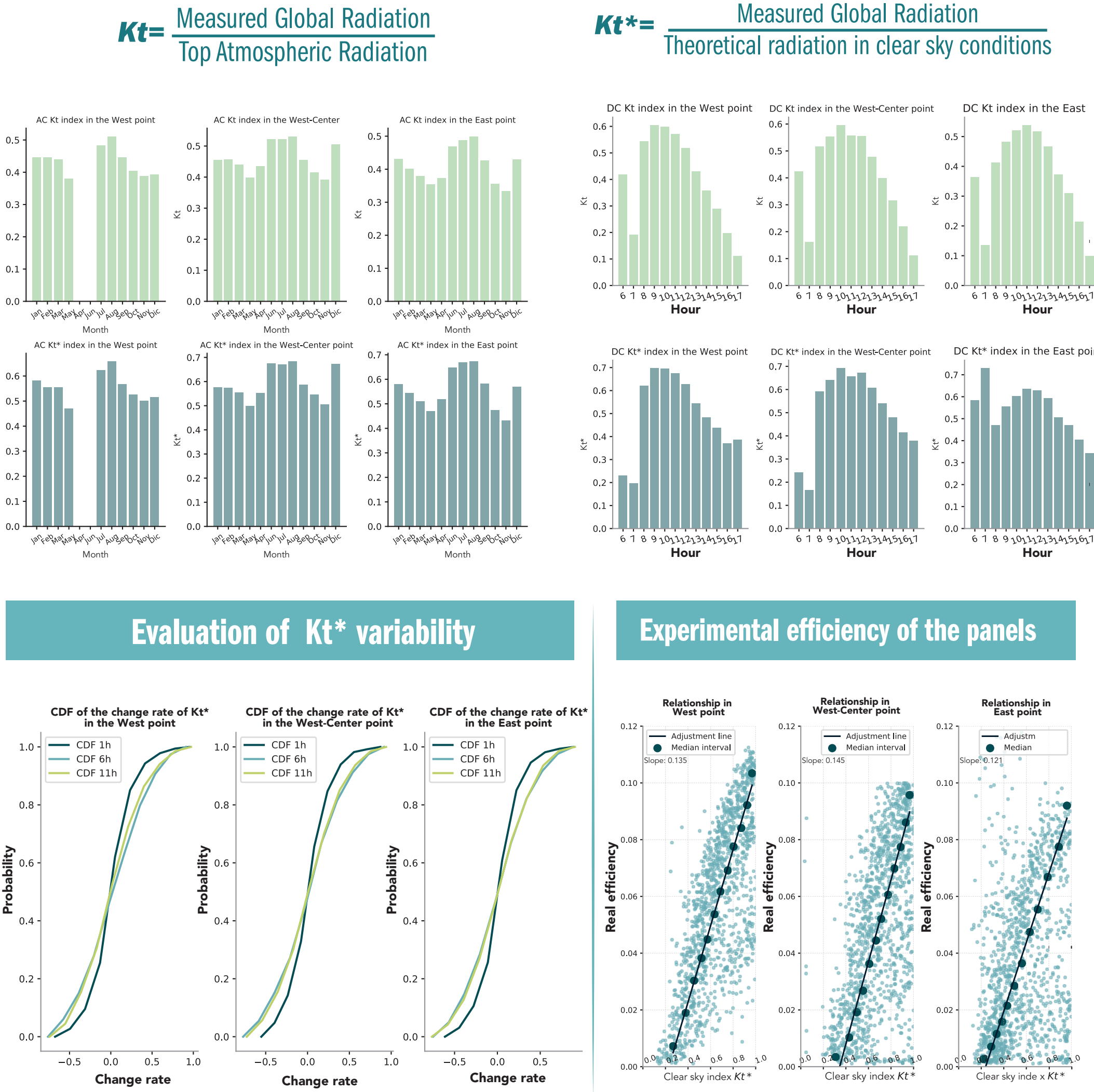
Introduction



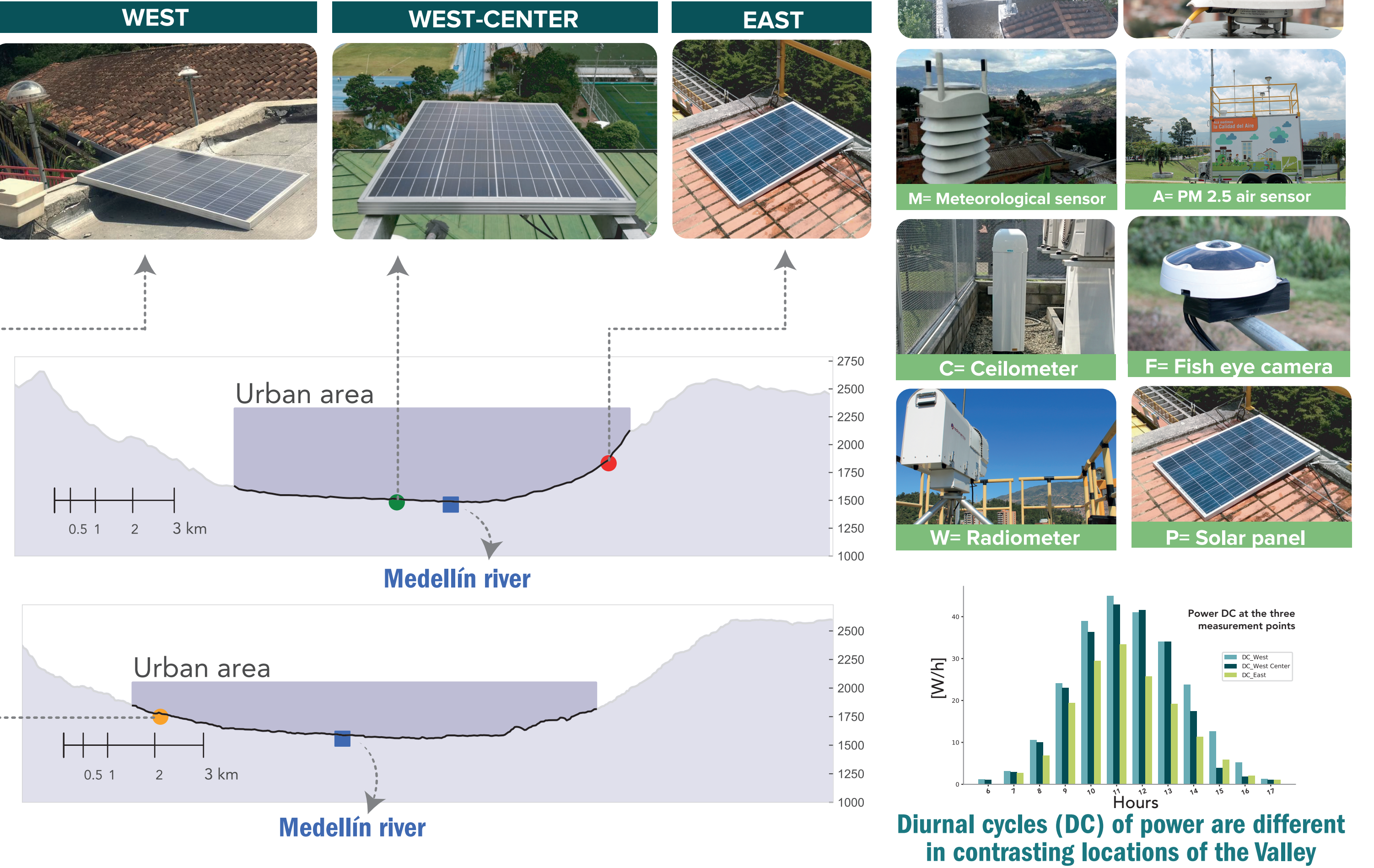
Reduction of surface solar radiation



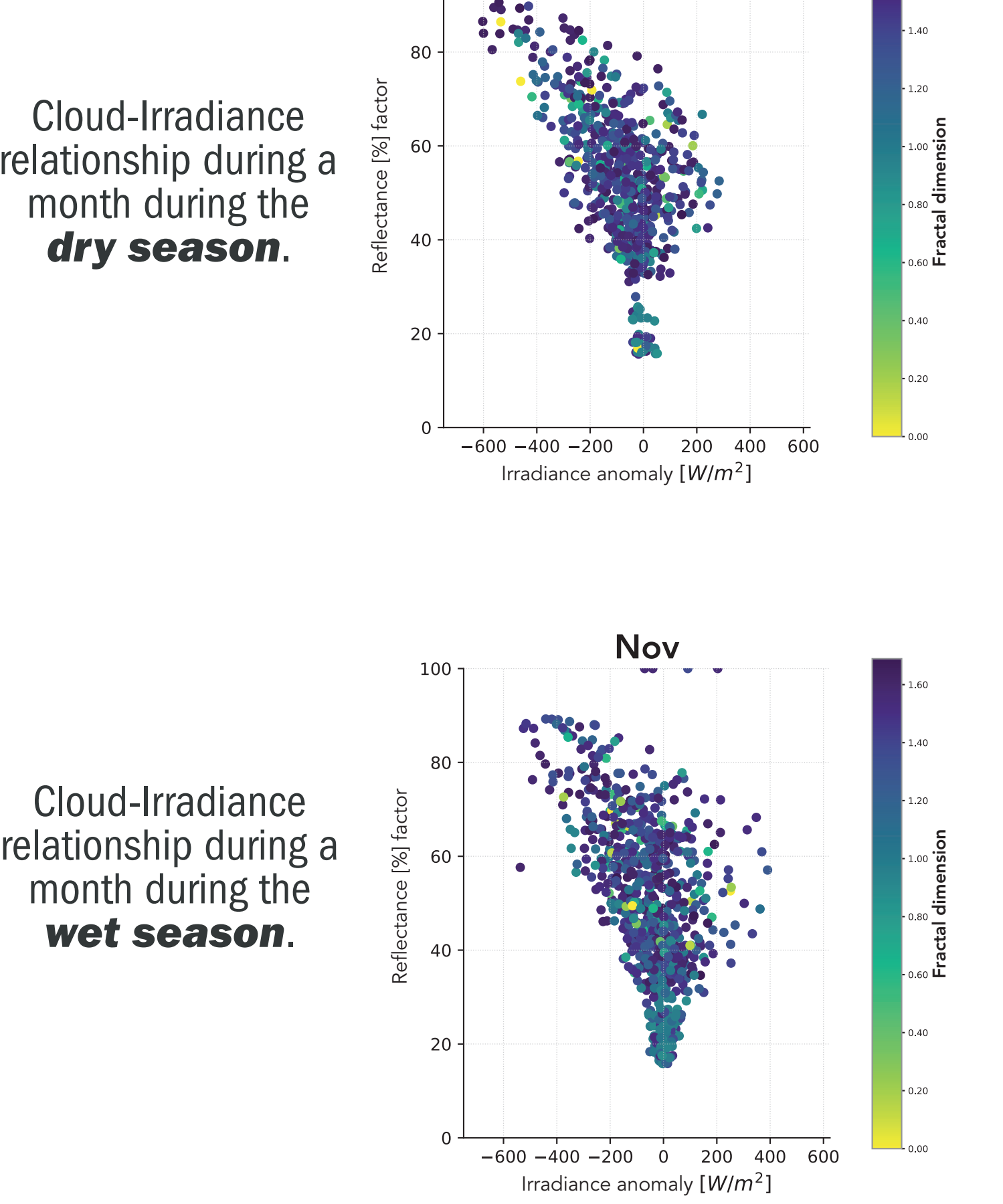
Clearness (Kt) & clear sky (Kt*) indexes



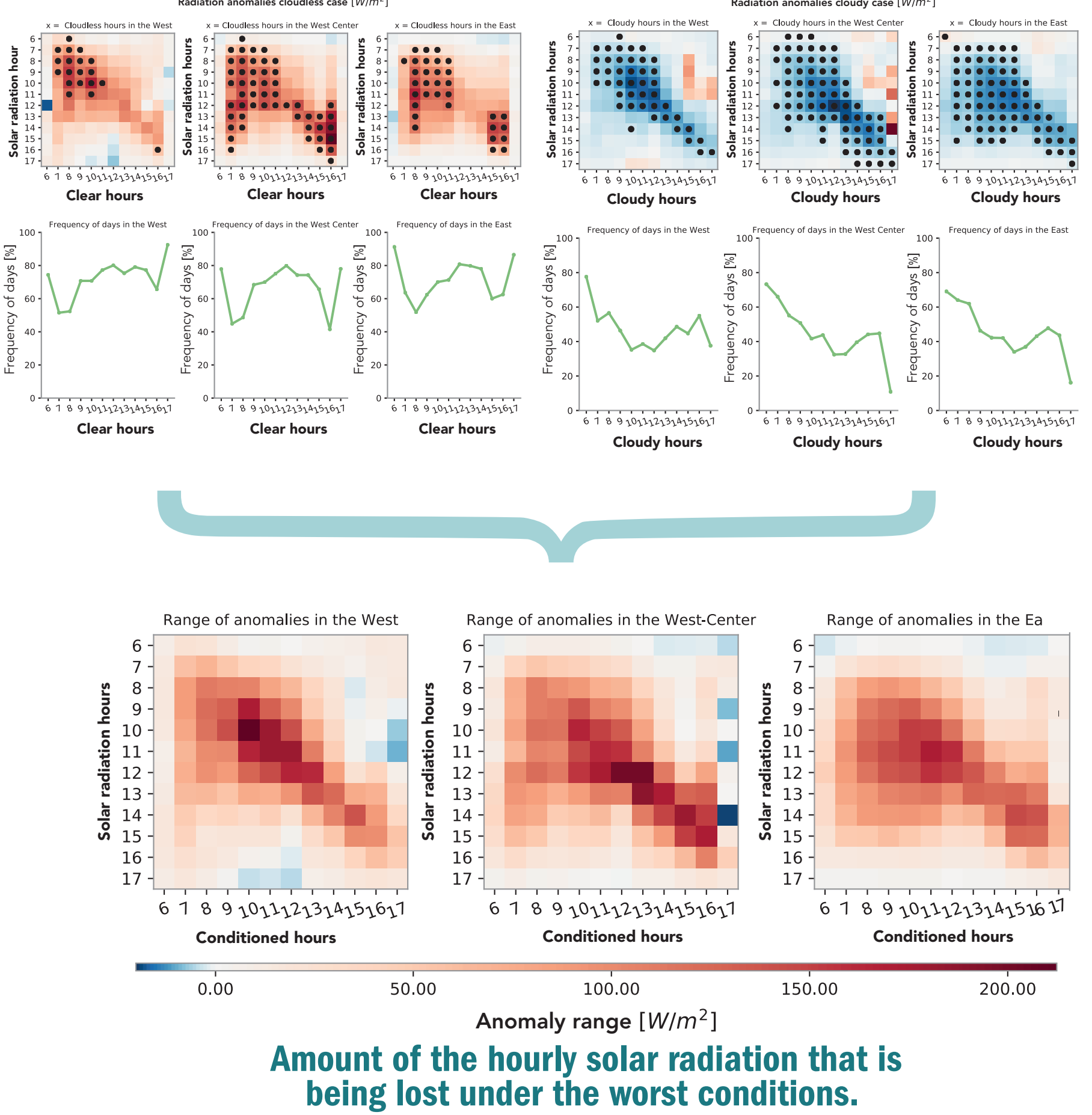
Data & methods



Clouds and irradiance anomalies



Irradiance anomalies composites



Conclusions

- Clouds are the main limiting factor for solar radiation and are more frequent during April and May in the morning hours. The typical cloud forcing magnitude is approximately 200 W/m².
- The slope of the adjustment line represents the efficiency of the solar panels at each point; according to this, the best performance is achieved at the west-center location.
- In all cases, the highest rates of variability of the Kt * index are between 0 and 0.3.

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Monthly & Hourly Frequency of Clouds

