

1.5.17. INFRARED THERMOGRAPHY AS AN ESTIMATOR TECHNIQUE OF A PHOTOVOLTAIC MODULE PERFORMANCE VIA OPERATING TEMPERATURE MEASUREMENTS

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The importance of a photovoltaic cell/module operating temperature for its electrical performance is well known, as well as the necessity for in situ fast and reliable monitoring techniques for PV park efficiency. Nowadays, these techniques are based namely on conventional “data acquiring” measuring principles. The latter are time consuming and unreliable in case of not suitable and uncertified measuring equipment.

The challenge for an in situ reliable, fast and adequately accurate technique for the estimation of a PV module performance is more than obvious.

The current paper investigates the pertinent correlation among the operating temperature of a PV module in situ (T_c) measured by an infrared (IR) camera and its relative electrical performance. The advantages and disadvantages of the (IR) technique are discussed in an effort to facilitate the monitoring/maintenance process in solar energy applications.