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Impacts of Incident angle modifier on PV modules performance

The performance of a photovoltaic (PV) module depends on miscellaneous parameters. Of course, these latter parameters vary from an indoor measurement experiment to an outdoor operation on the field. One of them is the panel's angle of orientation. In fact, depending on the angle of orientation, the panel can receive more or less irradiance. As many research papers found in the literature proved it, a module's performance is angular dependent. Meaning that if the irradiance rays are not perfectly normal to the incidence surface, reflection loss always occurs and the performance of the module decreases. To account for those optical losses, the incident angle modifier (IAM) is used; it is a performance factor that characterizes the irradiance really reaching the panel's surface with respect to the normal and angle of incidences of the irradiance. Unfortunately, the IAM changes from a given technology module to another one. For that reason, this work is an experimental investigation of the impacts that the angles of incidence can have on the performance of different modules.

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