# Comparison of single-diode models applied to thin film PV module operating under different environmental conditions

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Abstrak

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The electrical current voltage I until V characteristic a of photovoltaic PV module depends on the environmental conditions under which it operates. The shape of the I until V curve depends on the solar cell technology and changes dynamically in time with irradiance and temperature. A simulation model of the PV module can be used to examine the dynamic behavior of the I until V curve as well as to extract the module parameters from the curves. This paper presents the results of comparison of two different models based on a single diode equivalent circuit applied to a thin film module. The Matlab/Simulink simulation studies of I until V characteristic curves in the function of irradiance and temperature were carried out. The results were compared with the experimental data of the I until V curves obtained from outdoor measurements. Relative errors of the simulation and experimental results were analyzed.