Implementación de algoritmos MPPT en un controlador de carga para un prototipo de refrigeración con celdas Peltier [

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Analítica

This paper shows the implementation of MPPT algorithms in a solar charge controller that is evaluated in a prototype cooling system powered by solar photovoltaic energy. The MPPT algorithms whose meaning in Spanish is Maximum Power Point Tracking, seek to find the highest power level that can offer a solar photovoltaic system, given that these systems have a low efficiency of approximately 22% [1], besides the dependence they have on solar radiation and temperature, which determine it as a nonlinear system. Some of these algorithms are perturbed and observe incremental conductance and Artificial Intelligence (AI) based algorithms [2]. The research comprises the stages of mathematical modeling, calculation of power parameters, and implementation of MPPT algorithms that optimize the response of the PV power system. Also, as additional work and to validate these algorithms, this work shows the development of the prototype of the cooling system, which uses solar photovoltaic energy for its operation, and Peltier cells for the cooling process
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