

## **Discrete Variable Structure control of a DC moto-pump coupled to a photovoltaic generator**

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### **1. Abstract**

In photovoltaic system conception, one often tries to get the maximum solar energy in order to assure energizing needs of the used loads. A photovoltaic generator can function in a large range of output voltage and current but it can deliver a maximal power just for particular current and tension values. Indeed I\_V characteristic of PV generators depends on the solar irradiation and the temperature. These climatic variations involve maximal power point fluctuation. Therefore, one often inserts between the generator and the receptor one or several static converters that are controlled in order to have every time the maximal power. For it These converters, are known under the name of MPPT (Maximum Power Point Tracker). In this paper, two approches of discrete variable structure control (DVSC) are used to assure the MPPT operating.

Some reliable simulation results are provided in the following paper in order to demonstrate the efficiency of the proposed approaches.

**Keywords: Photovoltaic, MPPT, DC Moto-pump, Sliding mode, discret CSV, robustness.**