Abstract

This experimental study deals with the investigation of chaos during the regulation of output voltage of solar photovoltaic module. The Cuk converter is used as an interface between solar PV module and load, since the Cuk converter is the good choice for the maximum power point tracking (MPPT) circuits. The input voltage of the converter is controlled in order to regulate the operating point of the solar PV module. This paper proposes to design PID controller to obtain the input voltage of the converter is chaotic free and regulated one. The PID controller improves the transient response on the input voltage of the converter, avoids oscillation, overshoot, making easier the functioning of MPPT methods and ensures period -1 operation.

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**Index Terms**
- Computer Science
- Control Systems

**Keywords**
- Solar Pv Module
- Cuk Converter
- Chaos
- Pid Controller
- Voltage Regulation