

Abstract:

Many power electronics applications require a power calculation in the control system. To get a suitable output, engineers need to control the process and regulate the power exchange with the grid. Since real and reactive power calculations are so crucial a topic, a novel control strategy for a single-phase photovoltaic (PV) inverter has been developed. Therefore, Direct power control (DPC) and a single-phase three-level space vector pulse width modulation (SVPWM) combine as a control and modulation system. In this paper, predictive real and reactive power control and SVPWM method are conferred in the inner loop. A voltage controller based on a proportionalintegral (PI) scheme is used in the outer loop to acquire constant output voltage and provide power refers to the DPC. The performance of the proposed method is verified by using MATLAB/SIMULINK.