Single-phase inverter overmodulation

Overview

OM technology improves the primary voltage and current, reduces device variable reaction time, & increases the normal operating zone. The harmonic current issue, the difficulty of the overmodulation approach, and the seamless transition between linear and overmodulation areas. Single-phase inverters are used in battery powered sys-tems (uninterruptible power system - UPS) and in active power factor correction single-phase AC rectifiers. In such circuits MOS-FETs and IGBTs have usually been used, de-pending on the presumed requirements. The method derives closed-form relations between the switching angles and the modulation index and applies them as rotor-synchronized patterns. harmonics can be eliminated using. This thesis deals with the control of electrical machines in the overmodulation range.

Article Content

Overmodulation and six-step mode for observer-based V/Hz control

After a brief explanation of the system model, the overmodulation algorithm is described. This method allows to have a smooth transition between the linear operation to the extreme operating condition in ...

CHAPTER 2

2.2 Voltage Control in Single - Phase Inverters The schematic of inverter system is as shown in Figure 2.1, in which the battery or rectifier provides the dc supply to the inverter. The inverter is used to ...

A Practical Synchronous PWM Design for Reducing THD in ...

This paper presents a hardware-aware synchronous PWM strategy for single-inverter drives operating in overmodulation. The method derives closed-form relations between the switching ...

Over-modulation phenomena and its influence on the pulse width ...

This paper describes analysis of the pulse width modulated single-phase inverter output voltage. By using the over-modulation principle the low THD distortion of the output voltage...

An Improved SPWM-Based Control with Over ...

This paper provides a comprehensive spectrum analysis of three-level output voltage in a single-phase inverter working in over-modulation regime.

An Impression on Over Modulation Strategy in Inverter

The Pulse Width Modulation (PWM) inverter''s creation and application are critical to renewable energy technologies. Furthermore, one of the most essential concerns for PWM Inverters is Over Modulation ...

Comparative study of single-phase multilevel cascaded ...

This paper has presented a comprehensive analysis of a single-phase seven-level cascaded H5 transformerless inverter utilizing both phase-shifted PWM (PS-PWM) and level-shifted ...

Over-modulation phenomena and its influence on the pulse width ...

This paper deals with an analytical evaluation of the over-modulation phenomena in single-phase inverters cir-cuits, where the main goal was to decrease the input DC voltage while keeping the RMS ...

Unipolar and Bipolar PWM Inverter

In this paper, the SPWM (Sinusoidal Pulse Width Modulation) technique of unipolar and bipolar inverters is presented and the models are simulated in MATLAB – Simulink.

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