GPE Utility Storage

Zero-crossing of solar inverters

Overview

Zero-crossing distortion has been observed in the ac output current produced by some grid-connected photovoltaic inverters and this can cause a resonant response between the grid impedance and the inverter filter capacitor.

Article Content

An Optimal Control Scheme to Suppress the Current Zero-Crossing ...

Employing fully digital control to achieve a critical conduction mode (CRM) inverter is considered a cost-effective solution to obtain both high efficiency and

Decoupled Unipolar Hysteresis Current Control for Single-Phase Grid ...

In view of the problem of current zero-crossing distortion in the traditional unipolar hysteresis current control based on finite state machines (FSM), a new unipolar hysteresis current control strategy

PV Inverter Zero-Crossing Techniques

This paper presents two techniques for improving zero-crossing detection in grid-connected photovoltaic inverters: predictive filtering and phase-locked loops. A

SOGI Suppression Simulation for Zero-Crossing Distortion in Grid Tied ...

In conclusion, the SOGI-based simulation for suppressing zero-crossing distortion in grid tied inverters presents a robust solution to a persistent power quality issue.

Suppression of zero-crossing distortion for single-phase grid

In this paper, the reason for zero-crossing distortion is analyzed and simulated, also a novel current-control approach with commutating in advance is proposed to resolve this problem.

Experimental Validation of Zero Crossing Detection Sinusoidal Pulse ...

The ZCD control, implemented on an Arduino microcontroller, uses zero-crossing detection to directly extract phase and frequency information, reducing the complexity of processing and hardware.

Zero-crossing distortion in grid-connected PV inverters

Zero-crossing distortion has been observed in the ac output current produced by some grid-connected photovoltaic inverters and this can cause a resonant response between the grid impedance and the

A Control Strategy for Suppressing Zero-Crossing Current of ...

In this paper, a control strategy to suppress the zero-crossing current of a single-phase half-bridge three-level active neutral-point-clamped inverter is proposed.

A PREDICTIVE DIGITAL FILTER BASED ZERO-CROSSING

Measuring the accuracy of zero-crossing detection accuracy of zero crossing detection has risen when comparing relative merits of different techniques. The method proposed in this paper ...

A Hybrid Commutation Technique for Reducing Zero-Crossing

To address these issues, this paper proposes a hybrid commutation technique that merges the strengths of both unipolar and bipolar methods to effectively mitigate ZCD with a more

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