Grid-connected inverter repetitive control

How is a grid-connected inverter modeled?
The modelling of a single-phase inverter is first introduced; then a first-order repetitive control is developed for the proposed grid-connected inverter. Moreover, a high-order repetitive controller is adopted to further improve the robustness against the uncertainties in the period of signals.

What control methods are used for grid-connected inverter?
In this line, there are many control methods developed for grid-connected inverter, such as PI control, hysteresis control, deadbeat control, robust control, repetitive control, and adaptive control [20 - 26].

What is feedforward Repetitive Control (FRC) for grid-tied inverters in microgrids?
To solve the problem, in this article, we present a feedforward repetitive control (FRC) scheme for grid-tied inverters in microgrids to track the fundamental reference signal and suppress the harmonic signals simultaneously.

Does frequency-adaptive dual-mode repetitive control address harmonic compensation degradation in grid-tied inverters?
This paper proposes a frequency-adaptive dual-mode repetitive control (FA-DMRC) strategy for grid-tied inverters to address harmonic compensation degradationin conventional DMRC caused by non-integer delays during grid frequency variations.

A generic selective harmonic repetitive control (G-SHRC) is proposed as a simple and highly effective control scheme for grid-connected converters. G-...

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Conventional inverter upper and lower tubes cannot conduct simultaneously and dead time leads to current distortion, a strategy based on improved repetitive control under Z-source grid ...

To address this issue, this paper presents a new passivity-based design method for RC for LCL-type grid-connected inverters with either inverter-side or grid-side current control.

Fractional-order repetitive control (FORC) based on fractional delay filter has been used to deal with the time-varying periodic references due to its simpleness and easiness to implement.

A repetitive predictive control for grid-connected inverter current control scheme is presented in this paper under voltage harmonic distortion in the stationary reference frame. ...

Abstract This paper proposes a frequency-adaptive dual-mode repetitive control (FA-DMRC) strategy for grid-tied inverters to address harmonic compensation degradation in ...

This paper proposes a cascade repetitive control strategy based on odd internal mode, and combines it with proportional-integral (PI) control to establish a compound repetitive control ...

Abstract: Conventional repetitive control (RC) with an internal model constant Q less than 1 has a limited resonant bandwidth and a limited open-loop gain and then has mediocre steady-state ...

Repetitive control (RC), which can track any periodic signal with a known integer period with zero steady-state error, is widely used for current control of grid-tied inverters in microgrids. ...

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