

To address the active power impact issue caused by the discrete characteristics of the energy storage medium in gravity energy storage systems, a power impact mitigation method based ...

Dynamic Surface Sliding Mode Control-Based LFC Design for RES-Dominated Power Systems With a Provision of Grid-Scale Virtual Energy Storage

This paper studies the sliding mode control of regulating system of pumped storage power station (PSPS) considering nonlinear pump-turbine characteris...

By incorporating Superconducting Magnetic Energy Storage (SMES) into grid-connected marine current turbines and implementing intelligent event-triggered Sliding Mode ...

This study aims to propose a novel sliding mode consensus control (SMCC) for WTs assisted by ESSs to address the aforementioned problems. The contributions of this ...

In this paper, we approach the energy management problems from the control point of view to exploit the remarkable advantages of control techniques in treating state ...

The HEV is controlled by a sliding mode controller with direct torque control. The simulation findings validate the efficacy of the provided energy management and sliding mode control ...

Abstract A high penetration of the Renewable Energy Sources (RES) can create stability, reliability and power quality problems in the main electrical grid due to their stochastic ...

Therefore, this paper redesigns the sliding mode surface and reaching law, considering the high operating speed of the flywheel energy storage system, rapid charging ...

6 · The energy storage component is a 33 Ah battery. An adaptive control technique based on type-3 fuzzy sliding mode control (T3FSMC) is applied to ...

Abstract Sliding mode control of boost converter is studied. In order to improve dynamical performances with static and dynamic specifications, we propose a systematic procedure to ...

This paper proposes a control topology that integrates the robust performance of fractional order sliding mode control with the high charging/discharging rate and low ...

In this paper, a sliding mode control-based current sharing algorithm for Hybrid Energy Storage System is

proposed that also features uninterruptible supercapacitor cyclic ...

A novel adaptive command-filtered backstepping sliding mode control for PV grid-connected system with energy storage Dezhi Xu a, Gang Wang a, Wenxu Yan a, ...

In this study, a novel model and nonlinear barrier function-based first order sliding mode control (NBF-FOSMC) of a hybrid hydrogen-electric energy storage system in DC ...

In this paper, adaptive radial basis function neural network based sliding mode control of a fast acting superconducting magnetic energy storage (SMES) is reported. With the ...

This paper focuses on the control techniques implemented on a PV-wind based standalone DC microgrid with hybrid storage system. An Enhanced Exponential Reaching Law (EERL) based ...

Request PDF | Sliding Mode Control of Energy Storage Systems for Reshaping the Accelerating Power of Synchronous Generators | The rotor angle stability has been a key ...

With the aim to solve the problems related to the power distribution and current chattering in a distributed energy storage system (DESS), which can be considered as a multiagent system in ...

In this paper, a terminal sliding mode control strategy with projection operator adaptive law is proposed in a hybrid energy storage system (HESS). The objective of the ...

Secondly, a grid forming energy storage system based on sliding mode control (SMC) was designed, and an improved SMC control was added to the current inner loop to improve the ...

Sliding mode control strategy of grid-forming energy storage converter with fast active support of frequency and voltage Chen Hu¹, Haiyan Chen¹ and Aihong Tang^{2*} ¹State ...

Abstract In order to solve the problems of power fluctuation in the photovoltaic (PV) grid-connected system and the nonlinearity in the model of inverters, a projection-based adaptive ...

In this paper, we propose a sliding mode and Lyapunov Function based control for a DC microgrid. The microgrid involving renewable distributed generators (PV system and ...

Request PDF | Sliding Mode Control for PV Grid-Connected System With Energy Storage | We need to solve the problem due to the nonlinearity and power fluctuation in the ...

Aiming at the problem of power angle stability in power systems, an energy storage sliding mode controller was proposed to control the acceleration power of synchronous ...

Sliding mode control energy storage

In addition, a sliding-mode controller is designed to control the battery and supercapacitor currents to their reference values. The battery current reference is generated by ...

The double integral sliding mode control (DISMC) of a hybrid energy storage system (HESS), incorporating the fuel cell, battery, and UC, has been discussed in [14].

This paper proposes a conditioned adaptive barrier function-based integral super-twisting sliding mode controller for the hybrid energy storage system (HESS) with a field-oriented control of 3 ...

The HEV is controlled by a sliding mode controller with direct torque control. The simulation findings validate the efficacy of the provided energy management and sliding mode ...

Therefore, the sliding mode control (SMC) strategy of grid-forming (GFM) energy storage converter with fast active support of frequency and voltage is proposed in this paper.

An improved dynamic performance of DC-DC bidirectional SEPIC-Zeta converter based battery energy storage system (BESS) has been achieved using adaptive sliding mode ...

With the increasing penetration of wind power into the grid, its intermittent and fluctuating characteristics pose a challenge to the frequency stability of grids. Energy storage ...

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