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Power pulsation suppression in energy storage systems

With the development of renewable energy, large-scale energy storage technologies face new challenges, leading to increasingly demanding performance criteria for these pumps.

To improve the hydraulic efficiency and flow stability of a LVP for energy storage, this study first analyzes the pressure pulsation intensity in the main flow channel and then summarizes ...

In order to solve the power anti-regulation problem, the strategy of combining rotor kinetic energy release, power slope adjustment, and delay acceleration control is proposed.

In this paper, a control strategy utilizing low pass filter with SOC-based adaptive time constant is proposed, which considers the SOCs of energy storage devices. The proposed strategy can ...

In order to realize the lightweight design and low-carbon operation of multi-system locomotive, an active suppression method of DC voltage secondary pulsation of reusable energy ...

To reduce the triple low-frequency pulsation on the DC side caused by load characteristics, a notch filter is introduced at the reference current to achieve suppression of DC side ...

The present invention discloses a pulsating power suppression circuit, method and storage medium for an energy storage system.

Maintaining pressure pulsation within the control range is particularly critical for ensuring operational safety of variable-speed pumped storage plants (VSPSPs). However, there is limited ...

As a part of this new architecture, we introduce concepts of energy buffer (also known as Power Pulsation Buffer or PPB) to support AI peak loads without overloading the grid side. This article will ...

This review attempts to provide a critical review of the advancements in the Energy Storage System (ESS) from 1850-2022, including its evolution, classification, operating principles ...

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