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# Operational model of frequency regulation of energy storage power stations



## Overview

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Abstract—This paper presents a Frequency Regulation (FR) model of a large interconnected power system including Energy Storage Systems (ESSs) such as Battery Energy Storage Systems (BESSs) and Flywheel Energy Storage Systems (FESSs), considering all.

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rage Systems (BESSs) and Flywheel Energy Storage Systems (FESSs), considering all relevant stages in the frequency control process. Communication delays are considered in the transmission of the signals in the FR control loop and ESSs, and their State of Charge (SoC) management model is considered.

This paper presents a novel load frequency control (LFC) strategy for energy storage system (ESS)-integrated power systems, leveraging interval type-2 (IT-2) fuzzy logic and an adaptive integrated event-triggered scheme (AIETS). The proposed IT-2 fuzzy LFC addresses the nonlinearities in governor.

As the proportion of renewable energy generation continues to increase, the participation of new energy stations with high-proportion energy storage in power system frequency regulation is of significant importance for stable and secure operation of the new power system. To address this issue, an.

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