Maximum fluctuation of capacitor voltage

What is the maximum fluctuation amplitude of capacitor voltage?
Between 0.4 s and 0.7 s,the maximum fluctuation amplitude value of capacitor voltage is 108 V,and the fluctuation amplitude range is 8%. This is much smaller than the fluctuation amplitude value of the capacitor voltage without the suppression strategy.

How to control a variable frequency capacitor voltage?
Therefore, for variable-frequency operation, it is necessary to remove the suppression method at higher frequencies and only use the balance control method of the MMC sub-module to control the fluctuation of the sub-module capacitor voltage.

What is the fluctuation amplitude of a sub-module capacitor?
As is shown in these figures,the fluctuation amplitude of the sub-module capacitor voltage with the suppression control strategy applied is significantly smaller than the fluctuation amplitude without suppression control strategy between 0.5 s and 0.7 s.

What is the maximum voltage of a sub-module capacitor?
The maximum voltage reached is 128 V,and the fluctuation amplitude range is 28%. After 0.8 s,the fluctuation amplitude of the sub-module capacitor voltage decreases gradually and finally stabilizes as the MMC working frequency increases. Table 2. Asynchronous motor simulation parameters. Fig. 14. Simulated sub-module capacitor voltage waveform.

How does a capacitor sizing model work?
The proposed sizing model includes two functions: a) accurately estimating the capacitor voltage ripple based on the drive system parameters; and b) identifying the minimum capacitance of the submodule capacitors based on the allowed maximum capacitor voltage fluctuations.

Can a superposition method reduce the fluctuation of capacitor voltage?
Some papers have proposed a superposition method to reduce the fluctuation of capacitor voltage(Wang et al.,2013b). This method also has problems. The method of computing the current and voltage,which need to be superposed,must be adjusted according to the actual situation,which reduces its applicability.

Max-min function algorithm: Although the current sub-module capacitor voltage balance control strategy can effectively control the capacitor voltage balance of the sub-modules, the high switching frequency has always ...

In the realm of medium/high voltage applications, the modular multilevel converter with an active power filter (APF-MMC) emerges as a technology that eliminated the ...

Maximum fluctuation of capacitor voltage

The voltage rating indicates the maximum voltage the capacitor can handle without the risk of breakdown or failure. ... Power Supply Filters: Capacitors are commonly ...

This article presents a modular switched-capacitor multilevel inverter which uses two capacitors and a single dc source to obtain triple voltage gain. It is worth noting that the ...

In order to suppress the low-frequency voltage fluctuation of the MMC sub-module capacitors, this paper proposes a charge channel topology including in-phase and inter ...

The voltage depends upon the amount of charge and the size of the capacitor. (Q = CV, Energy stored = 0.5CV^2). If you connect a resistor across the terminals of a charged capacitor an initial current (= V/R) will flow ...

At this moment, the capacitance voltage for each of the switch devices is compared and the SM possessing the maximum voltage of the capacitor is the broken SM with ...

Then, the characteristics of capacitor voltage fluctuation in HBSMs and FBSMs are portrayed. Based on the characteristics, the runnable region for hybrid MMC is demonstrated, and the ...

The maximum amplitude of the SM capacitor voltage fluctuation DU max is 0.984 V. In this section, experiments are performed when R L = 10 O and the SM capacitance value is 6600 mF. As shown in Fig. 9a, when the ...

This article proposes an optimal submodule capacitor selection method based on the common-mode voltage injection. The proposed sizing model includes two functions: 1) accurately ...

In order to solve the neutral-point voltage fluctuation problem of three-phase three-level T-type inverters (TPTLTIs), the unbalance characteristics of capacitor voltages ...

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