Inverter parallel high frequency circulation

What are the types of circulating current in parallel inverters?
There are two types of circulating current in parallel inverters: low-frequency and high-frequency circulating current. The low-frequency cir-culating current is parameter related,such as imperfect sym-metry in hardware and dependent control of parallel inverter dead time [18,19].

How does circulating current affect the power rating of a parallel inverter?
The circulating current deteriorates the output current quality and degrades the reliability of the parallel system [12-15]. Harmonic components of circulating current can influence the inverter life cycle,limiting the power ratingof the total parallel-connected inverter [16,17].

Why do parallel inverters reduce circulating current?
The common mode voltage of each inverter is distributed more equally in a carrier cycle,and thus the circulating currents of paralleled modules are mitigated . Furthermore,the reduction methods for low-frequency circulating current can be divided into two categories based on control and modulation [40-67].

Does circulating current suppression improve reliability and redundancy of parallel inverter systems?
Circulating current suppression can effectively improvethe reliability and redundancy of parallel inverter systems. The mechanism and influencing factors of the low- and high-frequency zero-sequence circulating current (ZSCC) are analyzed in this study.

It can be seen from the above analysis that high-frequency harmonic resonance is a malignant phenomenon in the parallel operation of the multi-inverter, which seriously ...

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This paper presents the control strategy for parallel operation of an inverter to eliminate DC & AC circulating current. This paper also analyses the cross-current between ...

Multi-level inverters, especially 3-level configurations, are becoming crucial in electric vehicle drivetrains for their efficiency and capability to handle high voltage levels. Hofer ...

Finally, a control strategy of active power equalization and reactive power minimization is proposed to minimize the parallel circulation of inverters. And a 25 kHz high ...

To increase system power, multiple inverters are connected in parallel. However, if multiple inverters are connected in parallel but without carrier synchronization, it is possible to ...

The control issue of multiple inverter modules operated in parallel is investigated for high-frequency alternative current (HFAC) power distribution architectures, where multiple ...

This paper introduces a method to reduce circulating current with high frequency in parallel inverters. The high frequency component of circulating current is generated by output ...

In order to solve the circulation problem caused by the parameter difference of parallel high frequency resonant inverters, a current equalization control strategy is proposed. ...

Analytical formula (3) can be obtained, when the output voltage amplitude or phase of the high-frequency inverter parallel modules is not equal, the current between the high-frequency ...

Reference [21] combined carrier phase shifting with interleaved parallelism and proposed a two-degree-of-freedom interleaved paralleling algorithm that can significantly ...

Compared with parallel 3p3l inverter system, greater circulating current exists in the neutral leg of parallel 3p4l inverter system due to smaller value of neutral filter inductor and high-frequency ...

It is commonly used to suppress differential-mode circulating current, which is the difference in output currents of parallel branches in different inverters [14 - 16]. The CI exhibits ...

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