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Analysis of multi-level inverter with limited device count for energy systems

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Abstract:

In this study, a new multilevel converter topology is suggested. The suggested topology's key characteristics are its low component count and compact design. The suggested converter also lacks capacitors, inductors, and diodes, which allows for a smaller converter footprint, longer converter lifetime, and easier control method. In addition, a comparison with current multilevel topologies is done to illustrate the advantages of the proposed circuit. A presentation of the simulation results for the three-level version utilising various modulation schemes follows.

Keywords:

Pulse width modulation multilevel inverters, fundamental frequency modulation, THD