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Journal of Electrical Power Systems- Vol. 1-No. 2- Autumn 2012

Application of Different Topology of Z-Source Inverter Based DVR

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Abstract:

In this paper, Z-Source Inverter base DVR is used. In this system, the size of energy storage elements and nominal values of power electronic devices are decreased in compare with the conventional DVR which uses VSI. Here, four different topologies of Z-source inverter based DVR are analyzed and compared, which two of them have energy storage devices, and two topologies have no energy storage that take energy from the grid during the period of compensation. Simulation tests based on comparison parameters can be used to compare the performance of different proposed topologies. The mentioned topologies of z-source inverter based DVR are simulated in MATLAB/ SIMULINK software.

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Keywords: DVR, Topology, VSC, Z-Source Converter