

COMPARISON OF VSI AND ZSI BASED STATCOM SYSTEMS

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Abstract

This paper presents the modeling and simulation results of Z-Source Inverter based Static Compensator (STATCOM). The fourteen bus systems with and without STATCOM are modeled and simulated using the blocks of MATLAB/SIMULINK. Voltage sag mitigation using Z-Source Inverter is presented. The present work proposes Z-Source Inverter for the control of reactive power. The advantages of this system are reduced ripple, shoot through capability and reduced heating. The results of VSI based STATCOM are compared with those of Z-Source Inverter based STATCOM system. Real and reactive power with and without STATCOM are studied. The results of spectrum analysis are also presented.

Keyword : FACTS, Static Synchronous Compensator (STATCOM), VSI, ZSI.