

A Comparative Study of Series-Connected Two-Motor Drive Fed by a Single Inverter

Authors : A. Djahbar, E. Bounadja, A. Zegaoui, H. Allouache

Abstract : In this paper, vector control of a series-connected two-machine drive system fed by a single inverter (CSI/VSI) is presented. The two stator windings of both machines are connected in series while the rotors may be connected to different loads, are called series-connected two-machine drive. Appropriate phase transposition is introduced while connecting the series stator winding to obtain decoupled control the two-machines. The dynamic decoupling of each machine from the group is obtained using the vector control algorithm. The independent control is demonstrated by analyzing the characteristics of torque and speed of each machine obtained via simulation under vector control scheme. The viability of the control techniques is proved using analytically and simulation approach.

Keywords : drives, inverter, multi-phase induction machine, vector control

Conference Title : ICESCEE 2016 : International Conference on Energy Storage, Conversion and Electrical Engineering

Conference Location : Jeddah, Saudi Arabia

Conference Dates : January 26-27, 2016