

IEEE IAS/CIS SEMINAR

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Five Level Inverter Fed IM Drive with CME and DC Link Capacitor Balancing Based Only On Switching State Redundancies

Common mode voltage variations in PWM inverter fed drives generate unwanted shaft and bearing current resulting in early motor failure. Multilevel inverters reduce this problem to some extent, with higher number of levels. But the Complexity of the power circuit increases with increase in the inverter voltage levels, for high voltage and high power application. In this seminar a five-level inverter structure will be explained for IM drives, by only cascading two conventional two-level and three-level inverters, with the elimination of common mode voltage for the entire modulation. The DC link power supply requirement is also optimized using DC link capacitor voltage balancing, with PWM control, using only inverter switching state redundancies. The proposed power circuit gives a very simple power bus structure.

Thursday, September 27 1:30 – 3:00 pm

University of Missouri - Rolla

Room 105, Electrical Engineering Building

K. Gopakumar (M'94–SM'96) received the B.E., M.Sc.(Eng.), and Ph.D. degrees from the Indian Institute of Science, Bangalore, India, in 1980, 1984, and 1994, respectively. He was with the Indian Space Research Organization from 1984 to 1987. He is currently an Associate Professor at the Centre for Electronics Design and Technology, Indian Institute of Science. His fields of interest include power converters, PWM techniques, and ac drives. Dr. Gopakumar is an Associate Editor of the IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS.