

Ant Colony Optimization Control for Multilevel STATCOM

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Abstract : Flexible AC Transmission Systems (FACTS) are potentially becoming more flexible and more economical local controllers in the power system; and because of the high MVA ratings, it would be expensive to provide independent, equal, regulated DC voltage sources to power the multilevel converters which are presently proposed for STATCOMs. DC voltage sources can be derived from the DC link capacitances which are charged by the rectified ac power. In this paper a new stronger control combined of nonlinear control based Lyapunov's theorem and Ant Colony Algorithm (ACA) to maintain stability of multilevel STATCOM and the utility.

Keywords : Static Compensator (STATCOM), ant colony optimization (ACO), lyapunov control theory, Decoupled power control, neutral point clamped (NPC)

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