FLC with 3DSVM for 4LEG 4WIRE Shunt Active Power Filter

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Abstract : In this paper, a controller based on fuzzy logic control (FLC) associated to Three Dimensional Space Vector Modulation (3DSVM) is applied for shunt active filter in αβo axes domain. The main goals are to improve power quality under disturbed loads, minimize source currents harmonics and reduce neutral current magnitude in the four-wire structure. FLC is used to obtain the reference current and control the DC-bus voltage at the inverter output. The switching signals of the four-leg inverter are generating through a Three Dimensional Space Vector Modulation (3DSVM). Selected simulation results have been shown to validate the proposed system.