Three-level active neutral point clamped DSTATCOM with Interval Type-2 fuzzy logic controller

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D. Suresh ; T. Jayanth Kumar ; S.P. Singh **All Authors**

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Abstract:

In this article the powerful three-level neutral point clamped (ANPC) inverter used as a distributed static compensator (DSTATCOM). The active neutral point clamped inverter has the advantages of low harmonic distortion and minimized shifting loss. The active neutral point clamped inverter is used as DSTATCOM eliminating the harmonics and the nonlinear load reactive energy. Traditionally, the differential integral controller is used to regulate the voltage and current dc connection of DSTATCOM. For comprehensive mathematical modeling of the overall system, the proportional controller requires and it is tedious process. In order to overcome the abovementioned task interval type-2 fuzzy logic controller (IT2FLC) applied DSTATCOM based on a three-level effective neutral point converter. The proposed IT2FLC is used to monitor both the DCvoltage and the current loop to improve the output of the three DSTATCOM rates. DSTATCOM's overall framework including the fuzzy logic controller built in MATLAB / Simulink. DSTATCOM's simulated response has been found to be better and better than the traditional PI controller.

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Contents

The large amount of world energy is processed through power electronics equipment such as variablefrequency drives, computers and electronic ballasts and so on. Such loads contribute to the utility of the enormous harmonics that Sign in to Continue Reading frequency. The harmonics cannot contribute the effective energy and must therefore be paid. Active power filter was proposed to eliminate the harmonics. The active filter is also known as DSTATCOM [1]-[3].

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