

INTEGRATED HARMONIC SUPPRESSION IN FOC BASED PMSM DRIVE

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ABSTRACT

Permanent Magnet Synchronous Motors are increasingly used in household appliances, robots, electric vehicles and other portable machines due to their smaller size and less weight. Also it has high power density which results in high efficiency and performance. This paper presents Field Oriented Control also known as Vector Control method to effectively control the speed and torque of the PMSM. Field Oriented Control is a closed loop system in which Space Vector Pulse Width Modulation is used for variable frequency sinusoidal input voltage. However due to high frequency switching elements there will be harmonics in motor currents. To suppress this combination of LC filter and Adaptive Notch Filter is used.

KEYWORDS: *Adaptive Notch Filters, Harmonic LC Filter Permanent Magnet Synchronous Motor*