

## عنوان مقاله:

Torque Ripple suppression of Surface Mounted Permanent Magnet Synchronous Motor Using Harmonic Injected Currents

## محل انتشار:

اولین کنفرانس بین المللی الکترونیک قدرت و سیستم های درایو (سال: 1388)

تعداد صفحات اصل مقاله: 5

## نویسندگان:

Rahimi - Islamic Azad University-South of Tehran Branch, Iran

Abbaszadeh - Department of electrical Eng, KNTU University of technology, Iran

radan - Department of electrical Eng, KNTU University of technology, Iran

## خلاصه مقاله:

This paper describes a new approach based on Fourier analysis and simple harmonic computation method to minimize torque pulsation and current harmonic noises in a surface mounted permanent magnet synchronous motors (SPMSM) with field oriented control (FOC) system. To suppress torque ripple caused mainly by non-sinusoidal back electromotive force (BEMF), and harmonics in control system, non-sinusoidal currents should be injected into the PMSM. Although many effective schemes based on new adaptive control or iterative optimization methods, are presented in previous works but these methods increase complexity of control system. As a comparison with the other methods, this paper provides a novel simple harmonic compensation approach with significant effects to obtain optimal motor drive without any complexity. The simulation results in MATLAB /Simulink confirm the validity of proposed control approach and its effectiveness in minimizing torque pulsations and harmonic noises in PMSM.

## کلمات کلیدی:

Fourier analysis, Harmonic compensation, PMSM, torque ripple minimization

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/152781>

