

Delay Compensation in Torque Ripple Mitigation Feedback Systems

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Categories:

- Computer Technology
- Electrical Engineering

Keywords:

- Computer Hardware
- Computer Technology
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- Sensors

A major challenge to implementing a permanent magnet synchronous machine (PMSM) is the noise and vibration it feeds into a system. Current research has proposed feedback based methods utilizing sensors to measure the torque ripple-induced vibration; however, these methods introduce a delay between the torque ripple and the measured vibration, leading to the failure of the torque ripple mitigation controls.

Purdue University researchers have developed an algorithm to compensate for the delay that occurs when attempting to utilize feedback to control the electromagnetic torque of a PMSM. The algorithm does not require the characterization of the motor, nor does the system integrator need to know the motor parameters.

Advantages:

- Enables the use of feedback based mitigation of PMSM produced noise
- Provides low noise electronic machines for high volume applications

Potential Applications:

- Computer Technology
- Computer Hardware
- Sensors

People:

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Intellectual Property:

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