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## Stable V/f control system with controlled power factor angle for permanent magnet synchronous motor

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### Abstract

This study develops a new control system for a permanent magnet synchronous motor (PMSM) operating only in the field weakening region. The system is designed to regulate the motor speed and torque, and it is implemented in a digital signal processor (DSP). The system is tested on a PMSM drive, and the results show that the system can achieve a stable and accurate control of the motor speed and torque.

### Keywords

**KeyWords Plus:** SENSORLESS PMSM DRIVE; DIRECT TORQUE CONTROL; SIGNAL INJECTION; VECTOR CONTROL; SPEED CONTROL; FAST DYNAMICS; VERY-LOW; POSITION; OBSERVER; OPERATION

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