Extended Kalman Filter Based Direct Torque Control of Permanent Magnet Synchronous Motor

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Abstract : A robust sensorless speed for permanent magnet synchronous motor (PMSM) has been presented for estimation of stator flux components and rotor speed based on The Extended Kalman Filter (EKF). The model of PMSM and its EKF models are modeled in Matlab /Sirnulink environment. The proposed EKF speed estimation method is also proved insensitive to the PMSM parameter variations. Simulation results demonstrate a good performance and robustness.