

Turkish Journal of Electrical Engineering & Computer Sciences

Turkish Journal

of

A Full Adaptive Observer for DC Servo Motors

Electrical Engineering &
Computer Sciences

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 [Keywords](#)

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Abstract: An adaptive observer estimating all parameters and load torque is proposed for DC servo motors. The observer uses no direct feedback but the adaptation schemes use current and speed measurements. Both the observer and adaptations are simple to implement for real-time applications. Simulation results are satisfactory for the full adaptive observer. If the observer works in parallel with only load torque and armature resistance adaptations, the results are very good even if very low-quality sensors are used. In this simulation, only a single hall sensor is used as a rotational transducer, which produces a single pulse per revolution, and very high level noise and disturbance are added in order to provide a more realistic simulation.

Key Words: DC servo motors, adaptive observers, DC motor drives, parameter estimations

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Turk. J. Elec. Eng. & Comp. Sci., **11**, (2003), 117-130.

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