Design of a RLS-Based Real-Time State Observer for Estimating Joint Accelerations and Inertias of a Robot Manipulator

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- a RLS-based real-time state observer for a robot manipulator is designed.
- Since it is difficult to model the inertia and to measure the acceleration accurately, an RLS-based joint model observer (RLS-SOB) is designed.
- The inertial mass of each joint as well as angular acceleration in real time are estimated as the configuration of the 2nd order linear model.
- The proposed method is empirically verified for a robot manipulator.

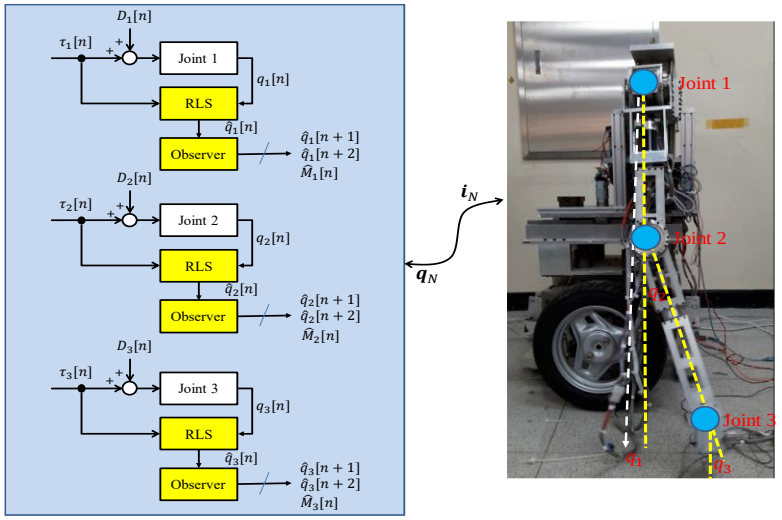

Fig. 1 Experimental setup for RLS-SOB control