ABSTRACT

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This master dissertation proposes a new approach for network-based extremum seeking with sampled data. The controller needs to deal with the natural delay of a networked control system, in addition to the sampling interval, which can be modeled by an unique variable. Basically, the novelty of our result is the real-time optimization of the proposed networked control system with time-varying delay. Simulation results illustrate the efficiency of the proposed extremum seeking control strategy adopted on the formulated sampled-data problem.

Keywords: Extremum seeking. Network-based control. Time-delay systems. Averaging theory for time-varying delays.