Nonlinear Switching Control With Increment Estimate of Unmodelled Dynamics

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Abstract: We present a new switching control method for controlling a class of nonlinear systems. The key design idea behind the control method lies in using the data of unmodelled dynamics, that is, the unmodelled dynamics of the last sampling instant and the estimate of unknown increment. The proposed algorithm is based on a new estimation algorithm, which contributes of two nonlinear controllers. The system performance is evaluated by a numerical simulation.

Keywords: Data driven; multiple models; switching; stability; convergence.