ASYMPTOTIC OUTPUT CONTROLLABILITY
VIA DYNAMIC MATRIX CONTROL

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Abstract. Motivated by industrial applications, we investigate the so-called Dynamic Matrix Control (DMC) strategy for single-input single-output linear continuous-time time-invariant systems. DMC is a type of Model Predictive Control based on the step response model of the process. We show that if the process is governed by a one-dimensional stable dynamical system, then the method drives the output of the sampled system into the desired setpoint as time goes to infinity, that is, the system is asymptotically output controllable with DMC. For two-dimensional systems, sufficient condition on the asymptotic output controllability is given.

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