

An Observer for Tropical Linear Event-Invariant Dynamical Systems

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R sum  en anglais
This paper presents a sufficient condition to solve the observation problem in tropical linear event-invariant dynamical systems, where a linear functional of the states can be observed in a finite number of steps using only the information from inputs and outputs. Using the residuation theory, this solvability condition can be easily implemented in polynomial time. Moreover, the main results are applied to state feedback control using only the observed states based on the measurements of the original states in the system. Furthermore, the main results are implemented in the perturbation observation problem for tropical linear event-invariant dynamical systems, where the system matrices are perturbed in intervals.

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