

Reachability and Observability of Linear Systems Over Max-plus.

Michael J. Gazarik; Edward W. Kamen

Abstract: This paper discusses the properties of reachability and observability for linear systems over the max-plus algebra. Working in the event-domain, the concept of asticity is used to develop conditions for weak reachability and weak observability. In the reachability problem, residuation is used to determine if a state is reachable and to generate the required control sequence to reach it. In the observability problem, residuation is used to estimate the state. Finally, as in the continuous-variable case, a duality is shown to exist between the two properties.

Keywords:

AMS Subject Classification: 93B;