Towards geometric control of max-plus linear systems with applications to manufacturing systems

Submitted by Emmanuel Lemoine on Thu, 01/30/2014 - 14:52

Titre	Towards geometric control of max-plus linear systems with applications to manufacturing systems
Type de publication	Communication
Type	Communication avec actes dans un congrès
Année	2011
Langue	Anglais
Date du colloque	2011
Titre du colloque	50th IEEE Conference on Decision and Control and European Control Conference, CDC-ECC 2011
Titre des actes ou de la revue	50th IEEE Conference on Decision and Control and European Control Conference, CDC-ECC 2011
Pagination	1149 - 1154
Auteur	Hardouin, Laurent [1], Lhommeau, Mehdi [2], Shang, Ying [3]
Pays	Etats-Unis
Editeur	IEEE Computer Society
Ville	Orlando
ISBN	978-1-61284-800-6 / 978-1-61284-799-3
Mots-clés	control [4], controller [5], Delay [6], disturbance [7], Equations [8], fault [9], geometric [10], Kernel [11], Linear [12], Manufacturing [13], Mathematical [14], Max-plus [15], Power [16], preventive [17], queueing [18], solvability [19], State [20], system [21], Trajectory [22]
Résumé en anglais	The max-plus linear systems have been studied for almost three decades, however, a well-established system theory on such specific systems is still an on-going research. The geometric control theory in particular was proposed as the future direction for max-plus linear systems by Cohen et al. This paper reports upon recent investigations on the disturbance decoupling problem for max-plus linear systems, which is the standard geometric control problem originated by W. M. Wonham. Different concepts of the disturbance decoupling problem are introduced, as well as the corresponding solvability conditions and controller synthesis procedures. The main results can be used in manufacturing systems, queueing networks, and power system networks for fault detection and system breakdown prevention.
Notes	Date du colloque : 12/2011
URL de la notice	http://okina.univ-angers.fr/publications/ua1626 [23]
DOI	10.1109/CDC.2011.6160489 [24]
Lien vers le document en ligne	http://dx.doi.org/10.1109/CDC.2011.6160489 [24]

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Publié sur *Okina* (http://okina.univ-angers.fr)