

## REFERENCES

- Agrachev, A. A. & Liberzon, D. 1999. Lie-algebraic conditions for exponential stability of switched systems. *Proceedings of the 38th IEEE Conference on Decision and Control*, p. 2679-2684.
- Anai, H., S. Hara, M. Kanno, & K. Yokoyama. 2009. Parametric polynomial spectral factorization using the sum of roots and its application to a control design problem. *Journal of Symbolic Computation*, 44 (7):703-725.
- Blanchini, F., Miani, S. & Mesquine, F. 2008. A separation principle for linear switching systems and parametrization of all stabilizing controllers. *47th IEEE Conference on Decision and Control*, p. 953-958.
- Boyd, S. 2009. EE363 Review Session4: Linear Matrix Inequalities. Stanford University.
- Brayton, R. K. & Tong, C. H. 1979. Stability of dynamical systems: A constructive approach. *IEEE Transaction on Circuit and Systems*, 26(4): 224-234.
- Brayton, R. K. & Tong, C. H. 1980. Constructive stability and asymptotic stability of dynamical systems. *IEEE Transaction on Circuit and Systems*, 27(11): 1121-1130.
- Brockett, R. W. 1993. Hybrid models for motion control systems. *Essays on Control: Perspectives in the Theory and its Applications*, p. 29-53.
- Davrazos, G. & Koussoulas, N. T. 2002. A general methodology for stability analysis of differential petri nets. *Proceedings of the 10th Mediterranean Conference on Control and Automation*.
- Davrazos, G. & Koussoulas, N. T. 2007. Modeling and stability analysis of state-switched hybrid systems via Differential Petri Nets. *Simulation Modelling Practice and Theory*, 15(8): 879-893.
- Dayawansa, W. P. & Martin, C. F. 1999. A converse Lyapunov theorem for a class of dynamical systems which undergo switching. *IEEE Transactions on Automatic Control*, 44(4): 751-760.
- Decarlo, R. A., Branicky, M. S., Pettersson, S. & Lennartson, B. 2000. Perspectives and results on the stability and stabilizability of hybrid systems. *Proceedings of the IEEE*, 88(7): 1069-1082.
- Ezzine, J. & Haddad, A. H. 1988. On the controllability and observability of hybrid systems. *Proceedings of the 1988 American Control Conference*, p. 41-46.

- Fainshil, L., Margaliot, M. & Chigansky, P. 2009. On the stability of positive linear switched systems under arbitrary switching laws. *IEEE Transactions on Automatic Control*, 54(4): 897-899.
- Ge, S. S., Zhendong, S. & Lee, T. H. 2001. Reachability and controllability of switched linear systems. *Proceedings of the 2001 American Control Conference*, p. 1898-1903.
- Geng, Z. 2010. Switched stability design on canonical forms. *IEEE International Conference on Information and Automation (ICIA)*, p. 289-293.
- Gopal, M. 2003. *Control Systems Principles and Design*. Ed. Ke-2. New Delhi: Mc Graw Hill.
- Grant, M. & Boyd, S. 2011. Cvx users' guide for cvx version 1.21. [http://cvxr.com/cvx/cvx\\_usrguide.pdf](http://cvxr.com/cvx/cvx_usrguide.pdf)
- Guangming, X., Dazhong, Z. & Long, W. 2002. Controllability of switched linear systems. *IEEE Transactions on Automatic Control*, 47(8): 1401-1405.
- Guangming, X. & Long, W. 2002. Necessary and sufficient conditions for controllability of switched linear systems. *Proceedings of the 2002 American Control Conference*, p. 1897-1902.
- Guisheng, Z., Derong, L., Imae, J. & Kobayashi, T. 2006. Lie algebraic stability analysis for switched systems with Continuous-Time and Discrete-Time subsystems. *IEEE Transactions on Circuits and Systems II: Express Briefs*, 53(2): 152-156.
- Gurvits, L., Shorten, R., & Mason, O. (2007). On the stability of switched positive linear systems. *IEEE Transactions on Automatic Control*, 52(6): 1099-1103.
- Haris, S. M. & Rogers, E. 2008. A Matlab toolbox for finding stabilizing controllers for a class of switched systems. *International Conference on Computational Intelligence for Modelling Control & Automation*, p. 238-242.
- Haris, S. M., Saad, M. H. M. & Rogers, E. 2007. A method for determining stabilizeability of a class of switched system. *Proceedings of the 7th WSEAS International Conference on Systems Theory and Scientific Computation*, p. 27-32.
- Haris, S. M. 2006. Analysis and design of classes of hybrid control systems. Thesis Ph.D. University of Southampton.
- Hespanha, J. P. & Morse, A. S. 2002. Switching between stabilizing controllers. *Automatica*, 38(11): 1905-1917.

- Hespanha, J. P., Santesso, P. & Stewart, G. 2007. Optimal controller initialization for switching between stabilizing controllers. *46th IEEE Conference on Decision and Control*, p. 5634-5639.
- Hag, J. B. & Bernstein, D. S. 2007. Nonminimum-phase zeros - Much to do about nothing - Classical control - Revisited Part II. *Control Systems*, 27(3): 45-57.
- Jianhong, W., Xun, L., Yaping, G. & Guangfeng, J. 2008. An LMI optimization approach to Lyapunov stability analysis for linear time-invariant systems. *Control and Decision Conference*, 2008. p. 3044-3048.
- Jin, L. & Brown, L. J. 2010. A multiple Lyapunov functions approach for stability of switched systems. *American Control Conference*, p. 3253-3256.
- King, C. & Shorten, R. 2004. A singularity test for the existence of common quadratic Lyapunov functions for pairs of stable LTI Systems. *Proceedings of the 2004 American Control Conference*, p. 3881-3884.
- Li, Z. G., Wen, C. Y. & Soh, Y. C. 2001. Stabilization of a class of switched systems via designing switching laws. *IEEE Transactions on Automatic Control*. 46(4): 665-670.
- Liberzon, D. 1999. ISS and integral-ISS disturbance attenuation with bounded controls. *Proceedings of the 38th IEEE Conference on Decision and Control*, p. 2501-2506.
- Liberzon, D., Hespanha, J. P. & Morse, A. S. 1999. Stability of switched systems: A lie-algebraic condition. *Systems & Control Letters*, 37(3): 117-122.
- Liberzon, D. & Morse, A. S. 1999. Basic problems in stability and design of switched systems. *Control Systems*, 19(5): 59-70.
- Ling, H. & Michel, A. N. 1997. Stability analysis of a general class of hybrid dynamical systems. *Proceedings of the 1997 American Control Conference*, p. 2805-2809.
- Löfberg, J. 2011. Yalmip.  
<Http://Users.Isy.Liu.Se/Johanl/Yalmip/Pmwiki.Php?N=Solvers.Solvers>.
- Lyapunov, A. M. & Fuller, A. T. 1992. The general problem of the stability of motion. Terj. Taylor & Francis.
- Lygeros, J. 2004. Hybrid Automata & Executions. *Lecture Notes on Hybrid Systems*. 16.
- Mancilla-Aguilar, J. L. & Garc á, R. A. 2000. A converse Lyapunov theorem for nonlinear switched systems. *Systems & Control Letters*, 41(1): 67-71.

- Martin, C. F. & Dayawansa, W. P. 1996. On the existence of a Lyapunov function for a family of switching systems. *Proceedings of the 35th IEEE Decision and Control*, p. 1820-1823.
- Mason, O. & Shorten, R. 2003. A conjecture on the existence of common quadratic Lyapunov functions for positive linear systems. *Proceedings of the 2003 American Control Conference*, p. 4469-4470.
- Mason, P., Sigalotti, M. & Daafouz, J. 2007. On stability analysis of linear discrete-time switched systems using quadratic Lyapunov functions. *46th IEEE Conference on Decision and Control*, p. 5629-5633.
- Montagner, V. F., Leite, V. J. S., Oliveira, R. C. L. F. & Peres, P. L. D. 2006. State feedback control of switched linear systems: An LMI approach. *Journal of Computational and Applied Mathematics*, 194(2): 192-206.
- Moor, T., Davoren, J. M. & Raisch, J. 2006. Learning by doing: Systematic abstraction refinement for hybrid control synthesis. *Control Theory and Applications, IEE Proceedings*, 153(5): 591-599.
- Narendra, K. S. & Shorten, R. 2010. Hurwitz stability of Metzler matrices. *IEEE Transactions on Automatic Control*, 55(6): 1484-1487.
- Nesic, D. & Liberzon, D. 2005. A small-gain approach to stability analysis of hybrid systems. *44th IEEE Conference on Decision and Control*, p. 5409-5414.
- Qi, F., Guangming, X. & Long, W. 2005. Stability analysis and stabilization synthesis for periodically switched linear systems with uncertainie. *Proceedings of the 2005 American Control Conference*, p. 30-35.
- Stewart, G. E. & Dumont, G. A. 2006. Finite horizon based switching between stabilizing controllers. *American Control Conference*, p. 7.
- Sun, Z. 2007. Converse Lyapunov theorem for switched stability of switched linear systems. *Chinese Control Conference*, p. 678-680.
- Sun, Z. & Ge, S. S. 2005. Analysis and synthesis of switched linear control systems. *Automatica*, 41(2005): 181-195.
- Vu, L. & Liberzon, D. 2006. On invertibility of switched linear systems. *45th IEEE Conference on Decision and Control*, p. 4081-4086.
- W. Zhang, Shen, S. Q. & Han, Z. Z. 2008. Sufficient conditions for Hurwitz stability of matrices. *Latin American Applied Research*, 38.

- Wenxiang, X., Changyun, W. & Zhengguo, L. 2001. Input-to-State stabilization of switched nonlinear systems. *IEEE Transactions on Automatic Control*, 46(7): 1111-1116.
- Yijing, W., Guangming, X. & Long, W. 2003. Reachability and controllability of switched linear systems with state jumps. *IEEE International Conference on Systems, Man and Cybernetics*, p. 672-677.
- Zhu, Y. H., Cheng, D. Z. & Qin, H. S. 2007. Constructing common quadratic Lyapunov functions for a class of stable matrices. *Acta Automatica Sinica*, 33(2): 202-204.