October 17, 2018

Publications of Björn Rüffer

[1] Duc N. Tran, Björn S. Rüffer, and Christopher M. Kellett. Convergence properties for discrete-time nonlinear systems. arXiv:1612.05327.

[2] S. N. Dashkovskiy, B. S. Rüffer, and F. R. Wirth. A small-gain type stability criterion for large scale networks of ISS systems. In *Proc. Joint 44th IEEE Conf. Decis. Control and Europ. Contr. Conf.*, pages 5633–5638, Seville, Spain, 2005.

[3] S. N. Dashkovskiy, B. S. Rüffer, and F. R. Wirth. Construction of ISS Lyapunov functions for networks. Technical report, ZeTeM, Universität Bremen, Germany, July 19th 2006.

[4] S. N. Dashkovskiy, B. S. Rüffer, and F. R. Wirth. Discrete time monotone systems: Criteria for global asymptotic stability and applications. In *Proc. 17th Int. Symp. Math. Th. Networks Systems (MTNS)*, pages 89–97, Kyoto, Japan, 2006.

[5] S. N. Dashkovskiy, B. S. Rüffer, and F. R. Wirth. On the construction of ISS Lyapunov functions for networks of ISS systems. In *Proc. 17th Int. Symp. Math. Th. Networks Systems (MTNS)*, pages 77–82, Kyoto, Japan, 2006.

[6] B. Scholz-Reiter, F. R. Wirth, M. Freitag, S. N. Dashkovskiy, T. Jagalski, C. de Beer, and B. S. Rüffer. Some remarks on the stability of production networks. In *Operations Research Proceedings*, volume 2005, pages 91–96, Bremen, Germany, 2006. Springer.

[7] S. N. Dashkovskiy, B. S. Rüffer, and F. R. Wirth. An ISS small gain theorem for general networks. *Math. Control Signals Syst.*, 19(2):93–122, May 2007.

[8] S. N. Dashkovskiy, B. S. Rüffer, and F. R. Wirth. A Lyapunov ISS small-gain theorem for strongly connected networks. In *Proc. 7th IFAC Symp. Nonlinear Control Systems*, pages 283–288, Pretoria, South Africa, August 22–24 2007.

[9] S. N. Dashkovskiy, B. S. Rüffer, and F. R. Wirth. Numerical verification of local input-to-state stability for large networks. In *Proc. 46th IEEE Conf. Decis. Control*, pages 4471–4476, New Orleans, LA, USA, 2007.

[10] H. Rekersbrink, B. S. Rüffer, B.-L. Wenning, B. Scholz-Reiter, and C. Görg. Routing in dynamischen netzen. *Logistik Management*, 9(1):25–36, 2007.

[11] B. S. Rüffer. *Monotone dynamical systems, graphs, and stability of large-scale interconnected systems*. PhD thesis, Universität Bremen, Germany, October 2007. Available online at `http://nbn-resolving.de/urn:nbn:de:gbv:46-diss000109058`.

[12] B. Scholz-Reiter, F. R. Wirth, M. Freitag, S. N. Dashkovskiy, T. Jagalski, C. de Beer, and B. S. Rüffer. Mathematical models of autonomous logistic processes. In Michael Hülsmann and Katja Windt, editors, *Understanding Autonomous Cooperation and Control in Logistics*, pages 121–138. Springer, 2007.

[13] S. N. Dashkovskiy, B. S. Rüffer, and F. R. Wirth. Application of small gain type theorems in logistics of autonomous processes. In *Proc. 1st Int. Conference Dynamics in Logistics*, pages 359–366, Bremen, Germany, August 28–30 2008. Springer.

[14] S. N. Dashkovskiy, B. S. Rüffer, and F. R. Wirth. Applications of the general Lyapunov ISS small-gain theorem for networks. In *Proc. 47th IEEE Conf. Decis. Control*, pages 25–30, Cancun, Mexico, December 9–11 2008.

[15] S. N. Dashkovskiy, B. S. Rüffer, and F. R. Wirth. Stability of autonomous vehicle formations using an ISS small-gain theorem for networks. In *PAMM, Special Issue: 79th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM)*, volume 8, pages 10911–10912, Bremen, Germany, March 2008.

[16] S. N. Dashkovskiy, B. S. Rüffer, and Fabian R. Wirth. Stability of interconnections of ISS systems. In *Proc. of the 8th SICE Annual Conference on Control Systems*, pages 52431–52434, Kyoto, Japan, 2008.

[17] B. S. Rüffer and C. M. Kellett. Implementing the Belief Propagation Algorithm in MATLAB. Technical report, Department of Electrical Engineering and Computer Science, University of Newcastle, Australia, November 2008.

[18] B. S. Rüffer, C. M. Kellett, and S. R. Weller. Integral input-to-state stability of interconnected iISS systems by means of a lower-dimensional comparison system. In *Proc. Joint 48th IEEE Conf. Decis. Control and 28th Chinese Contr. Conf.*, pages 638–643, Shanghai, P.R.China, 2009.

[19] S. N. Dashkovskiy, B. S. Rüffer, and F. R. Wirth. Small gain theorems for large scale systems and construction of ISS Lyapunov functions. *SIAM J. Control Optim.*, 48(6):4089–4118, 2010.

[20] B. S. Rüffer. Monotone inequalities, dynamical systems, and paths in the positive orthant of Euclidean n-space. *Positivity*, 14(2):257–283, June 2010.

[21] B. S. Rüffer. Small-gain conditions and the comparison principle. *IEEE Trans. Autom. Control*, 55(7):1732–1736, July 2010.

[22] B. S. Rüffer and S. N. Dashkovskiy. Local ISS of large-scale interconnections and estimates for stability regions. *Systems Control Lett.*, 59(3–4):241–247, 2010.

[23] B. S. Rüffer, P. M. Dower, and Hiroshi Ito. Computational comparison principles for large-scale system stability analysis. In *Proc. of the 10th SICE Annual Conference on Control Systems*, Kumamoto, Japan, March 2010. (electronic).

[24] B. S. Rüffer, P. M. Dower, C. M. Kellett, and S. R. Weller. On robust stability of the Belief Propagation Algorithm for LDPC decoding. In *Proc. 19th Int. Symp. Math. Th. Networks Systems (MTNS)*, Budapest, Hungary, July 2010. (electronic).

[25] B. S. Rüffer, Hiroshi Ito, and Peter M. Dower. Computing asymptotic gains of large-scale interconnections. In *Proc. 49th IEEE Conf. Decis. Control*, pages 7413–7418, 2010.

[26] B. S. Rüffer, C. M. Kellett, and P. M. Dower. On copositive Lyapunov functions for a class of monotone systems. In *Proc. 19th Int. Symp. Math. Th. Networks Systems (MTNS)*, Budapest, Hungary, July 2010. (electronic).

[27] B. S. Rüffer, C. M. Kellett, P. M. Dower, and S. R. Weller. Belief Propagation as a dynamical system: The linear case and open problems. *IET Control Theory Appl.*, 4(7):1188–1200, July 2010.

[28] B. S. Rüffer, C. M. Kellett, and S. R. Weller. Connection between cooperative positive systems and integral input-to-state stability of large-scale systems. *Automatica J. IFAC*, 46(6):1019–1027, 2010.

[29] B. S. Rüffer, R. Sailer, and F. R. Wirth. Comments on "A multichannel IOS small gain theorem for systems with multiple time-varying communication delays.". *IEEE Trans. Autom. Control*, 55(7):1722–1725, July 2010.

[30] Hiroshi Ito, Zhong-Ping Jiang, Sergey N. Dashkovskiy, and Björn S. Rüffer. A small-gain theorem and construction of sum-type Lyapunov functions for networks of iISS systems. In *Proc. IEEE American Contr. Conf.*, pages 1971–1977, 2011.

[31] B. S. Rüffer and Fabian R. Wirth. Stability verification for monotone systems using homotopy algorithms. *Numer. Algorithms*, 58(4):529–543, 2011.

[32] Björn S. Rüffer. Discussion of "On a small gain theorem for ISS networks in dissipative Lyapunov form". *Eur. J. Control*, 17(4):366–367, 2011.

[33] Sergey N. Dashkovskiy, Zhong-Ping Jiang, and Björn S. Rüffer. Editorial: Special issue on robust stability and control of large-scale nonlinear systems. *Math. Control Signals Syst.*, 24(1–2):1–2, 2012.

[34] Sergey N. Dashkovskiy, Björn S. Rüffer, and Fabian R. Wirth. Small gain theorems for large scale systems and construction of ISS Lyapunov functions. In *Proc. 51st IEEE Conf. Decis. Control*, pages 4165–4170, Maui, Hawaii, USA, 2012.

[35] Hiroshi Ito, Zhong-Ping Jiang, Sergey N. Dashkovskiy, and Björn S. Rüffer. A cyclic small-gain condition and an equivalent matrix-like criterion for iISS networks. In *Proc. 51st IEEE Conf. Decis. Control*, pages 4158–4164, Maui, Hawaii, USA, 2012.

[36] Björn S. Rüffer, Nathan van de Wouw, and Markus Mueller. From convergent dynamics to incremental stability. In *Proc. 51st IEEE Conf. Decis. Control*, pages 2958–2963, Maui, Hawaii, USA, 2012.

[37] Antoine Chaillet, Alexander Yu. Pogromsky, and Björn S. Rüffer. A Razumikhin approach for the incremental stability of delayed nonlinear systems. In *Proc. 52nd IEEE Conf. Decis. Control*, pages 1596–1601, 2013.

[38] Hiroshi Ito, Zhong-Ping Jiang, Sergey Dashkovskiy, and Björn S. Rüffer. Robust stability of networks of iISS systems: Construction of sum-type Lyapunov functions. *IEEE Trans. Autom. Control*, 58(5):1192–1207, May 2013.

[39] Hiroshi Ito and Björn S. Rüffer. A two-phase approach to stability of networks given in iISS framework: Utilization of a matrix-like criterion. In *Proc. IEEE American Contr. Conf.*, pages 4838–4843, 2013.

[40] Alexander Yu. Pogromsky, Alexey S. Matveev, Antoine Chaillet, and Björn S. Rüffer. Input-dependent stability analysis of systems with saturation in feedback. In *Proc. 52nd IEEE Conf. Decis. Control*, pages 5903–5908, 2013.

[41] Anders Rantzer, Björn S. Rüffer, and Gunther Dirr. Separable Lyapunov functions for monotone systems. In *Proc. 52nd IEEE Conf. Decis. Control*, pages 4590–4594, 2013.

[42] Björn S. Rüffer, Nathan van de Wouw, and Markus Mueller. Convergent systems vs. incremental stability. *Systems Control Lett.*, 62:277–285, 2013.

[43] Hiroshi Ito, Björn S. Rüffer, and Anders Rantzer. Max- and sum-separable Lyapunov functions for monotone systems and their level sets. In *Proc. 53rd IEEE Conf. Decis. Control*, pages 2371–2377, 2014.

[44] Navid Noroozi and Björn S. Rüffer. Non-conservative dissipativity and small-gain theory for ISS networks. In *Proc. 53rd IEEE Conf. Decis. Control*, pages 3131–3136, 2014.

[45] Björn S. Rüffer and Rudolf Sailer. Input-to-state stability for discrete-time monotone systems. In *Proc. 21st Int. Symp. Mathematical Theory of Networks and Systems (MTNS)*, pages 96–102, 2014.

[46] Gunther Dirr, Hiroshi Ito, Anders Rantzer, and Björn S. Rüffer. Separable Lyapunov functions: Constructions and limitations. *Discrete Contin. Dyn. Syst. Ser. B*, 20(8):2497–2526, 2015.

[47] Björn S. Rüffer and Hiroshi Ito. Sum-separable Lyapunov functions for networks of ISS systems: A gain function approach. In *Proc. 54th IEEE Conf. Decis. Control*, pages 1823–1828, 2015.

[48] D. A. Irosh P. Fernando and Björn Rüffer. A preliminary model for understanding how life experiences generate human emotions and behavioural responses. In Akira Hirose, Seiichi Ozawa, Kenji Doya, Kazushi Ikeda, Minho Lee, and Derong Liu, editors, *Neural Information Processing: 23rd International Conference, ICONIP 2016, Kyoto, Japan, October 16–21, 2016, Proceedings, Part III*, pages 269–278. Springer, 2016.

[49] Duc N. Tran, Björn S. Rüffer, and Christopher M. Kellett. Incremental stability properties for discrete-time systems. In *Proc. 55th IEEE Conf. Decis. Control*, pages 477–482, 2016.

[50] Björn S. Rüffer. Nonlinear left and right eigenvectors for max-preserving maps. In *Positive Systems*, volume 471 of *Lecture Notes in Control and Information Sciences*, pages 227–237. Springer, Cham, 2017.

[51] Ohad Giladi and Björn S. Rüffer. A Lyapunov function construction for a non-convex Douglas–Rachford iteration. *J. Optim. Th. & Appl.*, 2018. Accepted 25 Sep 2018. arXiv:1708.08697. DOI:10.1007/s10957-018-1405-3.

[52] Ohad Giladi and Björn S. Rüffer. A Perron-Frobenius type result for integer maps and applications. *Positivity*, 2018. To appear, accepted 16 October 2018. arXiv:1609.01393.

[53] Chris Guiver, Hartmut Logemann, and Björn Rüffer. Small-gain stability theorems for positive Lur'e inclusions. *Positivity*, 2018. To appear.

[54] Navid Noroozi, Roman Geiselhart, Lars Grüne, Björn S. Rüffer, and Fabian R. Wirth. Nonconservative discrete-time ISS small-gain conditions for closed sets. *IEEE Trans. Autom. Control*, 63(5):1231–1242, 2018.