

PUBLICATIONS OF RAFAL GOEBEL

REFEREED JOURNAL PUBLICATIONS:

22. C. Cai, R. Goebel, and A. Teel, *Relaxation theorems for hybrid inclusions*, to appear in Set-Valued Analysis; accepted October 2007.
21. C. Cai, A. Teel, and R. Goebel, *Smooth Lyapunov functions for hybrid systems. Part II: (Pre-)asymptotically stable compact sets*, to appear in IEEE Transactions on Automatic Control; accepted August 2007.
20. R. Goebel and R.T. Rockafellar, *Local strong convexity and local Lipschitz continuity of the gradient of convex functions*, to appear in Journal of Convex Analysis, Volume 15, Number 2, 2008; accepted May 2007.
19. R. Sanfelice, R. Goebel, and A. Teel *Invariance principles for hybrid systems with connections to detectability and asymptotic stability*, to appear in IEEE Transactions on Automatic Control; accepted May 2007.
18. R. Goebel, *Self-dual smoothing of convex and saddle functions*, to appear in Journal of Convex Analysis, Volume 15, Number 1, 2008, 179–190; accepted May 2007.
17. R. Sanfelice, R. Goebel, and A. Teel, *Generalized solutions to hybrid dynamical systems*, to appear in ESAIM: Control, Optimisation and Calculus of Variations; accepted April 2007.
16. C. Prieur, R. Goebel, and A. Teel, *Hybrid feedback control and robust stabilization of nonlinear systems*, IEEE Transactions on Automatic Control, Volume 52, Issue 11, 2007, 2103–2117.
15. C. Cai, A. Teel, and R. Goebel, *Smooth Lyapunov functions for hybrid systems. Part I: Existence is equivalent to robustness*, IEEE Transactions on Automatic Control, Volume 52, Issue 7, 2007, 1264–1277.
14. R. Goebel and M. Subbotin, *Continuous time constrained Linear Quadratic Regulator – convex duality approach*, IEEE Transactions on Automatic Control, Volume 52, Issue 5, 2007, 886–892.
13. R. Goebel, A. Teel, T. Hu, and Z. Lin, *Conjugate convex Lyapunov functions for dual linear differential inclusions*, IEEE Transactions on Automatic Control, Volume 51, Issue 4, 2006, 661–666.
12. R. Goebel and A. Teel, *Solutions to hybrid inclusions via set and graphical convergence with stability theory applications*, Automatica, Volume 42, Issue 4, 2006, 573–587.
11. T. Hu, A. Teel, R. Goebel, and Z. Lin, *Conjugate Lyapunov functions for saturated linear systems*, Automatica, Volume 41, Issue 11, 2004, 1949–1956.

10. R. Goebel, *Stabilizing a linear system with saturation through optimal control*, IEEE Transactions on Automatic Control, Volume 50, Issue 5, 2005, 650–655.
9. R. Goebel, *Duality and uniqueness of convex solutions to stationary Hamilton-Jacobi equations*, Transactions of the AMS, Volume 357, 2005, 2187–2203.
8. R. Goebel, *Convex optimal control problems with smooth Hamiltonians*, SIAM Journal of Control and Optimization, Volume 43, Number 5, 2005, 1787–1811.
7. J. Borwein and R. Goebel, *On the nondifferentiability of cone-monotone functions in Banach spaces*, to appear in Optimization: Structure and Applications, E. Hunt and C.E.M. Pearce editors, Applied Optimization Series, Kluwer Academic Publishers.
6. R. Goebel, *Regularity of the optimal feedback and the value function in convex problems of optimal control*, Set-Valued Analysis, Volume 12, Issue 1-2, 2004, 127–145.
5. J. Borwein and R. Goebel, *Notions of relative interior in Banach spaces*, Journal of Mathematical Sciences, Volume 115, Issue 4, 2003, 2542–2553.
4. R. Goebel, *Planar generalized Hamiltonian systems with large saddle sets*, Journal of Nonlinear and Convex Analysis, Volume 3, Number 3, 2002, 365–380.
3. R. Goebel and R.T. Rockafellar, *Generalized conjugacy in Hamilton-Jacobi theory for fully convex Lagrangians*, Journal of Convex Analysis, Volume 9, Number 1, 2002, 463–473.
2. R. Goebel, *Convexity in zero-sum differential games*, SIAM Journal on Control and Optimization, Volume 40, Number 5, 2002, 1491–1504.
1. R. Goebel, *Sufficient condition for stability of an L^2 -angle*, Bulletin of the Polish Academy of Science, Vol 45, No 3, 1997, 227–232.

SUBMITTED CONTRIBUTIONS:

4. H. Bauschke, R. Goebel, Y. Lucet, and X. Wang, *The proximal average: basic theory*, submitted April 2007.
3. R. Goebel and A. Teel, *Direct design of robustly asymptotically stabilizing hybrid feedback*, submitted April 2007.
2. R. Goebel, C. Prieur, and A. Teel, *Smooth patchy control Lyapunov functions*, submitted July 2007.
1. R. goebel, R. Sanfelice, and A. Teel, *Invariance principles for switching systems via hybrid systems techniques*, submitted September 2007.

SELECTED REFEREED CONFERENCE PROCEEDINGS CONTRIBUTIONS:

9. R. Goebel, R. Sanfelice, and A. Teel, *Hybrid systems techniques for convergence of solutions to switching systems*, Proceedings of the 46th IEEE Conference on Decision and Control, 2007.
8. R.T. Rockafellar and R. Goebel, *Linear-convex control and duality*, to appear in the Proceedings of the Geometric Control and Nonsmooth Analysis Conference, Rome 2006, Series on Advances in Mathematics for Applied Sciences.
7. C. Cai, A. Teel, and R. Goebel, *Results on relaxation theorems for hybrid systems*, Proceedings of the 45th Conference on Decision and Control, 2006.
6. R. Sanfelice, A. Teel, R. Goebel, and C. Prieur, *On the robustness to measurement noise and unmodeled dynamics of stability in hybrid systems*, Proceedings of the 2006 American Control Conference, 2006, 4061–4066.
5. R. Sanfelice, R. Goebel, and A. Teel, *A feedback control motivation for generalized solutions to hybrid systems*, Hybrid Systems: Computation and Control: 9th International Workshop, HSCC 2006, Editors: J. Hespanha and A. Tiwari, Springer.
4. R. Goebel, A. Teel, T. Hu, and Z. Lin, *Dissipativity for dual linear differential inclusions through conjugate storage functions*, Proceedings of the 43rd IEEE Conference on Decision and Control, 2004.
3. R. Goebel, J. Hespanha, A. Teel, C. Cai, and R. Sanfelice, *Hybrid systems: generalized solutions and robust stability*, 6th IFAC Symp. on Nonlinear Contr. Systems, 2004.
2. D. Dačić, R. Goebel, and P. Kokotović. *A factorization approach to C^1 stabilization of nonlinear triangular systems*, Proceedings of the 42nd IEEE Conference on Decision and Control, Maui, 2003.
1. R. Goebel, *Stationary Hamilton-Jacobi equations for convex control problems — uniqueness and duality of solutions*, Optimal Control, Stabilization, and Nonsmooth Analysis; de Queiroz, M., M. Malisoff, and P. Wolenski, Editors; Lecture Notes in Control and Information Sciences, Springer-Verlag, 2004, 313–322.

OTHER CONTRIBUTIONS:

5. C. Cai, R. Goebel, R.G. Sanfelice, and A.R. Teel, *Hybrid systems: limit sets and zero dynamics with a view toward output regulation*, Analysis and Design of Nonlinear Control Systems. In Honor of Alberto Isidori, 237–257, Springer-Verlag, 2007.
4. R. Goebel, T. Hu, and A. Teel, *Dual matrix inequalities in stability and performance analysis of linear differential/difference inclusions*, Current trends in nonlinear systems and control, 103–122, Systems Control Found. Appl., Birkhuser Boston, Boston, MA, 2006.

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3. R. Goebel, *Convexity, Convergence and Feedback in Optimal Control*, Doctoral Dissertation, Department of Mathematics, University of Washington, 2000.
 2. R. Goebel, *Convexity and Hamiltonian equations in differential games*, Interim Report, International Institute for Applied Systems Analysis, August 1998.
 1. R. Goebel, *On the Stability of an L^2 -angle*, Masters Thesis (in Polish), Department of Mathematics, University of Maria Curie-Sklodowska, Lublin, Poland, 1994.