

Hitay Özbay – Publications

(last updated April 17, 2015)

a1. Books

1. M. E. Ahsen, H. Özbay, S-I. Niculescu, **Analysis of Deterministic Cyclic Gene Regulatory Network Models with Delays**, Birkhauser, Basel, 2015, ISBN 978-3-319-15605-7; DOI: 10.1007/978-3-319-15606-4
2. H. Özbay, **Introduction to Feedback Control Theory**, CRC Press LLC, Boca Raton FL, 2000, ISBN 0-8493-1867-X.
3. C. Foias, H. Özbay, A. Tannenbaum, **Robust Control of Infinite Dimensional Systems: Frequency Domain Methods**, Lecture Notes in Control and Information Sciences, vol. 209, Springer-Verlag, London, 1996, ISBN 3-540-19994-2.

a2. Edited Book

1. A. Seuret, H. Özbay, C. Bonnet, H. Mounier, (Eds.) **Low-Complexity Controllers for Time-Delay Systems**, Advances in Delays and Dynamics, Vol. 2, Springer, 2014, ISBN 978-3-319-05575-6. DOI: 10.1007/978-3-319-05576-3

a3. Book Chapters

1. H. Özbay, “Robust Control of Infinite Dimensional Systems”, in *Encyclopedia of Systems and Control*, J.Baillieul, and T.Samad, (Eds.) Springer-Verlag, London, 2014, DOI: 10.1007/978-1-4471-5102-9_162-1
2. H. Özbay and A. N. Gündeş, “Design of First Order Controllers for Unstable Infinite Dimensional Plants”, in *Low-Complexity Controllers for Time-Delay Systems*, A. Seuret, et al. (eds.) Advances in Delays and Dynamics (ADD@S), Vol. 2, Springer, 2014, pp. 17—30; DOI: 10.1007/978-3-319-05576-3_2.
3. J. L. Avila, C. Bonnet, J. Clairambault, H. Özbay, S-I. Niculescu, F. Merhi, A. Ballesta, R. Tang, J.P. Marie, “Analysis of a new model of cell population dynamics in Acute Myeloid Leukemia”, in *Delay Systems: from Theory to Numerics and Applications*; T. Vyhlidal, J-F. Lafay, R. Sipahi eds., Advances in Delays and Dynamics at Springer (ADD@S), vol. 1, pp.315—328, 2014; DOI: 10.1007/978-3-319-01695-5_23
4. M. E. Ahsen, H. Özbay, S-I. Niculescu, “Analysis of Gene Regulatory Networks Under Positive Feedback”, in *Delay Systems: from Theory to Numerics and Applications*; T. Vyhlidal, J-F. Lafay, R. Sipahi eds., Advances in Delays and Dynamics at Springer (ADD@S), vol. 1, pp. 127—140, 2014; DOI: 10.1007/978-3-319-01695-5_10
5. H. Özbay, C. Bonnet, H. Benjelloun, J. Clairambault, “Local Asymptotic Stability Conditions for the Positive Equilibrium of a System Modeling Cell Dynamics in Leukemia”, in *Time Delay Systems: Methods, Applications and New Trends*, R. Sipahi, T. Vyhlidal, S-I. Niculescu, P. Pepe (Eds.), LNCIS vol. 423, pp. 185—195, Springer-Verlag, Berlin Heidelberg, 2012.
6. H. Özbay, “Stable H^∞ Controller Design for Systems with Time Delays”, in *Perspectives in Mathematical System Theory, Control, and Signal Processing*, J.C. Willems et al. (Eds.), LNCIS vol. 398, pp. 105—113, Springer-Verlag, Berlin Heidelberg, 2010.
7. H. Özbay and A. N. Gündeş, “Integral Action Controllers for Systems with Time Delays” in *Topics in Time Delay Systems Analysis, Algorithms, and Control*, J.J. Loiseau, W. Michiels, S-I. Niculescu, R. Sipahi (Eds.), Lecture Notes in Control and Information Sciences, vol. 388, Springer-Verlag, London, 2009, pp.197--207.
8. M. M. Peet, C. Bonnet and H. Özbay, “SOS Methods for Stability Analysis of Neutral Differential Systems” in *Topics in Time Delay Systems Analysis, Algorithms, and Control*, J.J. Loiseau, W. Michiels, S-I. Niculescu, R. Sipahi (Eds.), Lecture Notes in Control and Information Sciences, vol.. 388, Springer-Verlag, London, 2009, pp. 97--107.
9. H. Özbay, “The Root Locus Method”, in *Systems, Controls, Embedded Systems, Energy and Machines*, (a volume in *The Electrical Engineering Handbook*, 3rd Ed.), R. C. Dorf ed., CRC Press, Taylor & Francis Group, Boca Raton FL, 2006, pp. 11-34 to 11-58. (**INVITED**).
10. P. Yan and H. Özbay, “Robust Controller Design for AQM and H_∞ Performance Analysis” in

Advances in Communication Control Networks, S. Tarbouriech, C. Abdallah, J. Chiasson Eds., Springer-Verlag LNCIS, Vol. 308. 2005, pp. 49–64.

11. X. Yuan, M. Ö. Efe, H. Özbay, “On delay-based linear models and robust control of cavity flows,” in *Advances in Time-Delay Systems*, S. Niculescu and K. Gu Eds., Springer-Verlag, LNCSE vol.38, 2004, pp.287-298. DOI: 10.1007/978-3-642-18482-6_21
12. H. Özbay, “Principles of Feedback Control,” *The Engineering Handbook* 2nd ed., R. C. Dorf Ed., CRC Press LLC, Boca Raton FL, 2004, Chapter 170; **(INVITED)**.
13. H. Özbay, “The Root Locus Method”, in *The Mechatronics Handbook*, R. Bishop ed., CRC Press LLC, Boca Raton FL, 2002, Chapter 26; **(INVITED)**.
14. O. Toker and H. Özbay, “On the computation of suboptimal H_∞ controllers for unstable infinite dimensional systems,” in *Robust Control Theory*, B. A. Francis and P. P. Khargonekar eds., IMA Volumes in Mathematics and its Applications, Springer-Verlag, 1995, pp. 105–128; **(INVITED)**.
15. H. Özbay and J. Turi, “Feedback control of singular integro-differential systems: an input/output approach,” in *Identification and Control in Systems Governed by Partial Differential Equations*, H. T. Banks, R. H. Fabiano, K. Ito eds., SIAM Proceedings in Applied Mathematics **68**, 1993, pp. 186–202.
16. K. Lenz and H. Özbay, “Analysis and robust control techniques for an ideal flexible beam,” in *Multidisciplinary Engineering Systems: Design and Optimization Techniques and their Applications*, C. T. Leondes ed., Academic Press Inc., 1993, pp. 369–421; **(INVITED)**.
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18. H. Özbay and A. Tannenbaum, “On the synthesis of H_∞ optimal controllers for infinite dimensional systems,” in G. Chen, E. B. Lee, W. Littman and L. Markus Eds. *Distributed Parameter Control Systems: Trends and Applications*, Marcel Dekker Inc., New York, 1990, pp. 271–300; **(INVITED)**.
19. C. A. Schwartz and H. Özbay, “An identification procedure for linear continuous time systems with jump parameters,” in M. A. Kaashoek, J. H. van Schuppen, and A. C. M. Ran Eds. *Realization and Modelling in System Theory*, Birkhäuser, Boston, 1990, pp. 471–480. (*Selected papers from the MTNS-89, Amsterdam, The Netherlands, June 1989.*)
20. C. A. Schwartz and H. Özbay, “Recursive identification algorithms as nonlinear systems: Parameter identifiability and controllability,” in A. Isidori Ed. *Nonlinear Control Systems Design*, Pergamon Press, 1989, pp. 107–112. (*Selected papers from the IFAC Symposium, Capri, Italy, June 1989.*)

b. Peer Reviewed Journal Articles

1. S. Ahmed, F. Mazenc, H. Özbay, “Dynamic output feedback stabilization of switched linear systems with delay via a trajectory based approach,” *Automatica*, vol. 93, July 2018, pp. 92–97.
2. F. Mazenc, M. Malisoff, H. Özbay, “Stability and Robustness Analysis for Switched Systems with Time-Varying Delays,” *SIAM J. Control and Optimization*, vol. 56, no. 1, (2018), pp. 158–182.
3. V. Yücesoy, H. Özbay, “Optimal Nevanlinna Pick Interpolant and its Application to Robust Repetitive Control of Time Delay Systems,” *Applied and Computational Mathematics*, vol.17, no.1, (2018), pp. 96–108.
4. A. T. Koru, A. Delibaşı, H. Özbay, “Dwell Time Based Stabilization of Switched Delay Systems Using Free-Weighting Matrices,” *International Journal of Control*, vol. 91, no. 1, (2018), pp. 1–11. doi:10.1080/00207179.2016.1266515.

5. H. Özbay, H. Ç. Sağlam, M. K. Yüksel, "Hopf Cycles in One Sector Optimal Growth Models with Time Delay," *Macroeconomic Dynamics*, vol. 21 (2017), pp. 1887–1901. doi:10.1017/S1365100516000018.
6. P. Liu, P. Yan, Z. Zhang, H. Özbay "Robust Anti-windup Compensation for High Precision Tracking of a Piezoelectric Nano-stage" *IEEE Transactions on Industrial Electronics*, October 2016, vol. 63, no. 10, pp. 6460—6470; DOI: 10.1109/TIE.2016.2569060
7. M. E. Ahsen, H. Özbay, S-I. Niculescu, "Analysis of a Gene Regulatory Network Model with Time Delay using the Secant Condition" *IEEE Life Sciences Letters*, June 2016, vol. 2, no. 2, pp. 5—8; DOI: 10.1109/LLS.2016.2615091
8. M. E. Ahsen, H. Özbay, S-I. Niculescu "On the Analysis of a Dynamical Model Representing Gene Regulatory Networks under Negative Feedback", *International Journal of Robust and Nonlinear Control*, vol. 24, no. 11, 2014, pp. 1609—1627, DOI: 10.1002/rnc.2947.
9. M. Wakaiki, Y. Yamamoto, H. Özbay, "Sensitivity Reduction by Stable Controllers for MIMO Infinite Dimensional Systems via the Tangential Nevanlinna-Pick Interpolation", *IEEE Transactions on Automatic Control*, vol. 59 (2014), pp. 1099—1105; DOI: 10.1109/TAC.2013.2285788.
10. P. Yan, H. Özbay, M. Şansal, "Robust Stabilization of Parameter Varying Time Delay Systems by Switched Controllers," *Applied and Computational Mathematics*, vol. 13, no. 1, 2014, pp. 31—45.
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12. A. E. Karagül, O. Demir, H. Özbay, "Computation of Optimal H^∞ Controllers and Approximations of Fractional Order Systems: a tutorial review" *Applied and Computational Mathematics*, vol. 12 (2013), pp. 261—288.
13. M. Wakaiki, Y. Yamamoto, H. Özbay, "Stable controllers for robust stabilization of systems with infinitely many unstable poles", *Systems & Control Letters*, vol. 62 (2013), pp. 511–516.
14. H.U. Ünal, D. Melchor-Aguilar, D. Üstebay, S-I. Niculescu, H. Özbay, "Comparison of PI Controllers Designed for the Delay Model of TCP/AQM Networks," *Computer Communications*, vol. 36 (2013), pp.1225—1234, doi: http://dx.doi.org/10.1016/j.comcom.2013.03.001
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16. H. Özbay, "Computation of H^∞ controllers for infinite dimensional plants using numerical linear algebra", *Numerical Linear Algebra with Applications*, vol. 20 (2013), pp. 327—335. DOI: 10.1002/nla.1809.
17. A. R. Fioravanti, C. Bonnet, H. Özbay, S-I. Niculescu, "A numerical method for stability windows and unstable root-locus calculation for linear fractional time-delay systems", *Automatica*, vol.48 (2012) pp. 2824–2830; DOI: 10.1016/j.automatica.2012.04.009.
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d. Papers in Proceedings

1. V. Yücesoy, H. Özbay, "Design of Robustly Stabilizing Low Order, Stable Controllers for Two-Link Underactuated Planar Robots", *2017 IEEE Conference on Control Technology and Applications (CCTA)* August 27-30, 2017. Kohala Coast, Hawai'i, USA, pp. 150—154.
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3. F. Mazenc, S. Ahmed, H. Özbay, "State feedback stabilization of switched systems with delay: Trajectory based approach", *2017 American Control Conference*, Seattle WA, June 2017, pp. 4540—4543.
4. F. Mazenc, M. Malisoff, H. Özbay, "Stability analysis of switched systems with time varying discontinuous delays", *2017 American Control Conference*, Seattle WA, June 2017, pp. 5177—5181.
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7. S. Ahmed, H. Özbay, "Design of a switched robust control scheme for drug delivery in blood pressure regulation", *Proc. of the 13th IFAC Workshop on Time Delay Systems*, Istanbul, Turkey, June 2016, pp. 252—257.
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10. S. Ahmed, H. Özbay, "Switching robust controllers for automatic regulation of postoperative hypertension using vasodilator drug infusion rate" *Proc. of the 1st IFAC Workshop on Linear Parameter Varying Systems*, Grenoble, France, October 2015, pp. 224—229.
11. V. Yücesoy, H. Özbay, "On Stable Controller Design For Robust Stabilization of Time Delay Systems," *Preprints of 12th IFAC Workshop on Time Delay Systems*, Ann Arbor, USA, June 2015, pp. 404—409.
12. İ. Uyanık, M. Ankaralı, N. J. Cowan, U. Saranlı, Ö. Morgül, H. Özbay, "Independent Estimation of Input and Measurement Delays for a Hybrid Vertical Spring-Mass-Damper via Harmonic Transfer Functions," *Preprints of 12th IFAC Workshop on Time Delay Systems*, Ann Arbor, USA, June 2015, pp. 298—303.
13. M. E. Ahsen, H. Özbay, S-I. Niculescu, "A Secant Condition for Cyclic Systems with Time Delays and its Application to Gene Regulatory Networks ", *Preprints of 12th IFAC Workshop on Time Delay Systems*, Ann Arbor, USA, June 2015, pp. 171—176.
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16. O. Demir, H. Özbay, "On Reduced Order Modeling of Flexible Structures from Frequency Response Data," *Proceedings of the European Control Conference*, June 2014, Strasbourg, France, pp.1133—1138.
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