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Personal:	Dual Citizen of the USA and Turkey; <i>languages spoken:</i> Turkish, English, French

PROFESSIONAL EXPERIENCE

Bilkent University, Ankara, Turkey Professor, Department of Electrical and Electronics Eng. Associate Provost Interim Dean, Faculty of Humanities and Letters	2002—present 2014—17; 2018—2022 2015—2017
INRIA Paris-Rocquencourt and Saclay-Île-de-France, France Professeur Invité, équipes AT-ROC/BANG and DISCO	2009—2010
The Ohio State University, Columbus, OH, USA Adjunct Prof., Dept. of Electrical and Computer Engineering Visiting Professor, Dept. of Electrical and Computer Engineering Professor, Department of Electrical and Computer Engineering Associate Professor, Department of Electrical Engineering Assistant Professor, Department of Electrical Engineering	2018—2021 2017—2018 2001—2006 1994—2001 1991—1994
University of Rhode Island, Kingston, RI, USA Assistant Professor, Department of Electrical Engineering	1989—1990
University of Minnesota, Minneapolis, MN, USA Research and Teaching Assistant	1987—1989
McGill University, Montreal, Quebec, Canada Research and Teaching Assistant	1985—1987

EDUCATION

- 1987—1989 University of Minnesota, Minneapolis, MN, USA
Ph.D., Control Sciences and Dynamical Systems
- 1985—1987 McGill University, Montreal, Quebec, Canada
M.Eng, Electrical Engineering.
- 1981—1985 Middle East Technical University, Ankara, Turkey
B.S., Electrical and Electronics Engineering.

Publications (updated November 30, 2021)

Summary:

- 4 books published by SIAM (1 book), CRC Press (1 book), and Springer-Verlag (2 books)
- co-editor of 1 book published by Springer-Verlag
- 21 book chapters in edited volumes
- 82 journal articles
- 147 refereed papers in the proceedings of scientific meetings

Citations:

- ❖ Web of Science: 181 publications in the core collection, ~1900 citations, h-index=24
- ❖ Scopus: 201 cited documents, ~2650 citations, h-index=27
- ❖ Google Scholar: 299 articles, ~5300 citations; i10-index=114; h-index=34

a1. Books

1. H. Özbay, S. Gümüşsoy, K. Kashima, Y. Yamamoto, ***Frequency Domain Techniques for H^∞ Control of Distributed Parameter Systems***, SIAM, Philadelphia, 2018, ISBN 978-1-611975-39-0.
2. 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 (4K downloads as of November 30, 2021)
3. H. Özbay, ***Introduction to Feedback Control Theory***, CRC Press LLC, Boca Raton FL, 2000, ISBN 0-8493-1867-X.
4. 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 (15K downloads as of November 30, 2021)

a3. Book Chapters

1. M. E. Ahsen, H. Özbay, S-I. Niculescu, “Stability and robustness analysis of a class of cyclic biological systems”, in *Time Delay Systems - Theory, Numerics, Applications, and Experiments*, T. Insperger, G. Orosz, T. Ersal (Eds.) Advances in Delays and Dynamics (ADD@S), Springer 2017, pp. 155—172; DOI 10.1007/978-3-319-53426-8_11
2. H. Özbay, “Robust Control of Infinite Dimensional Systems”, in *Encyclopedia of Systems and Control*, J.Baillieul, and T.Samad, (Eds.) Springer-Verlag, London, 2014, pp. 1207—1214, DOI: 10.1007/978-1-4471-5102-9_162-2. Edited re-print, Springer Nature Switzerland AG 2021, pp. 1948—1954; DOI: 10.1007/978-3-030-44184-5.
3. 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.
4. 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
5. 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
 6. 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.
 7. 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.
 8. 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.
 9. 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.
 10. 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)**.
 11. 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.
 12. 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
 13. 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)**.
 14. H. Özbay, “The Root Locus Method”, in *The Mechatronics Handbook*, R. Bishop ed., CRC Press LLC, Boca Raton FL, 2002, Chapter 26; **(INVITED)**.
 15. 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)**.
 16. 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.
 17. 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)**.
 18. H. Özbay, “Computing the singular values and vectors of a Hankel operator,” in R. J. Vaccaro Ed. *Singular Value Decomposition and Signal Processing*, Elsevier Science Publishers, Amsterdam, 1991, pp. 455–469. (*Selected papers from the 2nd Intl. Workshop on SVD and Signal Processing, Kingston RI, 1990.*)
 19. 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)**.

20. 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.*)
21. 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. A. N. Gündeş, H. Özbay, "Strong Stabilization of High Order Plants," *Automatica*, vol. 140 (2022) 110256, doi: 10.1016/j.automatica.2022.110256
2. A. N. Gündeş, H. Özbay, "Controller Design for Plants with Internal Delayed Feedback", *IEEE Transactions on Automatic Control*, to appear June 2022; doi: 10.1109/TAC.2021.3089075.
3. H. Özbay, A. N. Gündeş, "PID and low-order controller design for guaranteed delay margin and pole placement", *International Journal of Robust and Nonlinear Control*, online version April 2021; DOI 10.1002/rnc.5521
4. P. Yan, P. Liu, H. Özbay, "Predictive Anti-Windup Compensation for Repetitive Control Supporting Nano-Scanning" *IEEE Trans. on Control Systems Technology*, vol. 29 No. 4, pp. 1807–1814, 2021.
5. O. Demir, H. Özbay, "Static output feedback stabilization of discrete time linear time invariant systems based on approximate dynamic programming" *Transactions of the Institute of Measurement and Control*, vol. 42, no. 16, pp. 3168-3182, 2020.
6. A. N. Gündeş, H. Özbay, "Controller redesign for delay margin improvement" *Automatica*, vol. 113, 108790, 2020, DOI:10.1016/j.automatica.2019.108790
7. A. T. Koru, A. Delibaşı, H. Özbay, "Dwell time-based stabilisation of switched linear delay systems using clock-dependent Lyapunov–Krasovskii functionals," *International Journal of Control*, vol. 93, pp. 1172-1179, 2020.
8. P. Yan, H. Özbay, Z. Lyu, "Robust track following in Hard Disk Drives with time delays: An infinite dimensional approach," *ISA Transactions*, vol. 93, pp. 280-289, 2019.
9. V. Yücesoy, H. Özbay, "On the real, rational, bounded, unit interpolation problem in H_∞ and its applications to strong stabilization," *Transactions of the Institute of Measurement and Control*, vol. 41, pp. 476-483, 2019.
10. P. Liu, P. Yan, H. Özbay, "Design and trajectory tracking control of a piezoelectric nano-manipulator with actuator saturations," *Mechanical Systems and Signal Processing*, vol.111 (2018), pp.529–544
11. 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.
12. 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.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.
18. 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.
 19. 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.
 20. 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.
 21. S. Y Çalışkan, H. Özbay, S. I. Niculescu, "Dwell-time computation for stability of switched systems with time delays", *IET Control Theory and Applications*, vol 7 (2013), pp. 1422–1428.
 22. 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.
 23. 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.
 24. 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.
 25. B. Liacu, A.T. Koru, H. Özbay, S-I. Niculescu, C. Andriot, "Optimizing low-order controllers for haptic systems under delayed feedback", *Control Engineering Practice*, vol. 21 (2013), pp. 655-668.
 26. 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.
 27. 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.
 28. M. Wakaiki, Y. Yamamoto, H. Özbay, "Sensitivity Reduction by Strongly Stabilizing Controllers for MIMO Distributed Parameter Systems" *IEEE Transactions on Automatic Control*, vol. 54 (2012), No. 8, pp. 2089—2094.
 29. H. Özbay, C. Bonnet, H. Benjelloun and J. Clairambault, "Stability Analysis of Cell Dynamics in Leukemia," *Mathematical Modelling of Natural Phenomena*, vol. 7 (2012), No. 1, pp. 203—234.
 30. H. Özbay, C. Bonnet, A. R. Fioravanti, "PID controller design for fractional-order systems with time delays", *Systems & Control Letters*, vol. 61 (2012), pp. 18–23.
 31. A. N. Gündeş, H. Özbay, "Strong Stabilization of a Class of MIMO Systems", *IEEE Transactions on Automatic Control*, vol. 56, June 2011, pp. 1445—1452.
 32. A. N. Gündeş, H. Özbay, "Reliable Decentralized Control of Delayed MIMO Plants", *International Journal of Control*, vol. 83, No. 3, March 2010, pp. 516—526.
 33. H. U. Ünal, B. Ataşlar-Ayyıldız, A. İftar, H. Özbay, "Robust Flow Control in Data-Communication Networks with Multiple Time-Delays" *International Journal of Robust and Nonlinear Control*, vol. 20 (2010), pp. 1529—1548.
 34. X. Yuan, E. Caraballo, J. Little, M. Debiasi, A. Serrani, H. Özbay, J. H. Myatt, M. Samimy, "Feedback Control Design for Subsonic Cavity Flows," *Applied and Computational Mathematics*, vol. 8 (2009), no. 1, pp. 70—91.
 35. S. Gumussoy and H. Özbay, "Sensitivity Minimization by Strongly Stabilizing Controllers for a Class of Unstable Time-Delay Systems," *IEEE Transactions on Automatic Control*, vol. 54, March 2009, pp. 590—595.
 36. İ. Muncas, Ö. Yelbasi, E. Biberovic, A. İftar, H. Özbay, "Decentralised robust flow controller design for networks with multiple bottlenecks", *International Journal of Control*, vol. 82, January 2009, pp. 95—116.

37. M.Ö. Efe, M. Debiiasi, P. Yan, H. Özbay and M. Samimy, "Seven Tuning Schemes for an ADALINE Model to Predict Floor Pressures in a Subsonic Cavity Flow", *Transactions of the Institute of Measurement & Control*, vol. 31, no. 1 (2009), pp. 97—112.
38. P. Yan and H. Özbay, "Stability Analysis of Switched Time-Delay Systems." *SIAM J. Control and Optimization*, vol. 47 (2008), no. 2, pp. 936—949.
39. S. Gümüşsoy and H. Özbay, "Stable H_∞ controller design for time delay systems," *International Journal of Control*, vol. 81, no. 4, April 2008, pp. 546—556.
40. M. Ö. Efe, M. Debiiasi, P. Yan, H. Özbay, M. Samimy, "Neural Network Based Modeling of Subsonic Cavity Flows", *International Journal of Systems Science*, vol. 39, No. 2, 2008, pp. 105-117.
41. K. Kashima, Y. Yamamoto and H. Özbay, "Parameterization of suboptimal solutions of the Nehari problem for infinite-dimensional systems," *IEEE Transactions on Automatic Control*, vol. 52, no. 12, December 2007, pp. 2369—2374.
42. H. Özbay and A. N. Gündeş, "Resilient PI and PD Controller Designs for a Class of Unstable Plants with I/O Delays," *Applied and Computational Mathematics*, vol. 6 (2007), pp. 18—26.
43. P. Yan and H. Özbay, "On switching H_∞ controllers for a class of linear parameter varying systems," *Systems & Control Letters*, vol. 56 (2007), pp. 504—511.
44. D. Üstebay, H. Özbay, A. N. Gündeş, "A new PI and PID control design method for integrating systems with time delays: applications to AQM of TCP flows," *WSEAS Transactions on Systems and Control*, vol. 2, No. 2, February 2007, pp. 117—124.
45. A. N. Gündeş, H. Özbay, A. B. Özgüler, "PID controller synthesis for a class of unstable MIMO plants with I/O delays", *Automatica*, vol. 43, No. 1, January 2007, pp. 135—142.
46. P. Yan, M. Debiiasi, X. Yuan, J. Little, H. Özbay, M. Samimy, "Experimental Study of Linear Closed-Loop Control of Subsonic Cavity Flow," *AIAA Journal*, vol. 44, No. 5, May 2006, pp. 929—938.
47. S. Gümüşsoy and H. Özbay, "Remarks on strong stabilization and stable H_∞ controller design," *IEEE Transactions on Automatic Control*, vol. 50, No. 12, December 2005, pp. 2083—2087.
48. K. Kashima, H. Özbay and Y. Yamamoto, "A Hamiltonian-based solution to the mixed sensitivity optimization problem for stable pseudorotational plants," *Systems & Control Letters*, vol.54 (2005), pp.1063—1068.
49. M. Ö. Efe, H. Özbay and M. Samimy, "Infinite dimensional and reduced order observers for Burgers equation," *International Journal of Control*, vol.78, no.11 (2005), pp. 864—874.
50. P. Yan, Y. Gao and H. Özbay, "A Variable Structure Control Approach to Active Queue Management for TCP with ECN," *IEEE Transactions on Control Systems Technology*, vol. 13 no. 2 (2005), pp.203—215.
51. M. Ö. Efe and H. Özbay, "Low dimensional modelling and Dirichlet boundary controller design for Burgers equation," *International Journal of Control*, vol.77, no.10 (2004), pp. 895—906.
52. S. Gümüşsoy and H. Özbay, "On the Mixed Sensitivity Minimization for Systems with Infinitely Many Unstable Modes," *Systems & Control Letters*, vol.53 no.3-4 (2004), pp. 211—216.
53. P-F. Quet and H. Özbay, "On the Design of AQM Supporting TCP Flows Using Robust Control Theory," *IEEE Transactions on Automatic Control*, vol.49 no.6 (2004), pp.1031—1036.
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55. P-F. Quet, B. Ataslar, A. Iftar, H. Özbay, S. Kalyanaraman, T. Kang, "Rate-based flow controllers for communication networks in the presence of uncertain time-varying multiple time-delays," *Automatica*, vol. 38 no.6 (2002), pp.917—928.
56. A. Kataria, H. Özbay, H. Hemami, "Controller design for natural and robotic systems with transmission delays," *Journal of Robotic Systems*, vol. 19 (2002), no. 5, pp. 231-244; DOI: 10.1002/rob.10037
57. H. Özbay, "On the computation of H_∞ optimal controllers and connections with IMC-based design,"

- Applied and Computational Mathematics*, vol. 1 (2002), no. 1, pp. 5–13.
58. M. Zeren and H. Özbay, "On the strong stabilization and stable H_∞ controller design problems for MIMO systems," *Automatica*, vol. 36 (2000), no. 11, pp. 1675–1684.
 59. H. Hemami and H. Özbay, "Modeling and control of biological systems with multiple afferent and efferent transmission delays," *Journal of Robotic Systems*, vol. 17 (2000), no. 11, pp. 609–622.
 60. H. Özbay, Book Review: "Optimization of Linear Control Systems: Analytical Methods and Computational Algorithms," by F. A. Aliev and V. B. Larin, *IEEE Transactions on Automatic Control*, vol. 45 (2000), no. 10, pp. 1937–1938.
 61. M. Zeren and H. Özbay, "On the synthesis of stable H_∞ controllers," *IEEE Transactions on Automatic Control*, vol. 44 (1999), no. 2, pp. 431–435.
 62. M. Zeren and H. Özbay, "Comments on 'Solutions to the combined sensitivity and complementary sensitivity problem in control systems'," *IEEE Transactions on Automatic Control*, vol. 43 (1998), no. 5, p. 724.
 63. O. Toker and H. Özbay, "On the complexity of purely complex μ computation and related problems in multidimensional systems," *IEEE Transactions on Automatic Control*, vol. 43 (1998), no. 3, pp. 409–414.
 64. V. Eldem, H. Özbay, H. Selbuz, K. Özcaldiran, "Partial disturbance rejection with internal stability and H_∞ norm bound," *SIAM Journal on Control and Optimization*, vol. 36 (1998) No. 1, pp. 180–192.
 65. T. E. Peery and H. Özbay, " H_∞ optimal repetitive controller design for stable plants," *Transactions of the ASME Journal of Dynamic Systems, Measurement, and Control*, vol. 119 (1997), pp. 541–547.
 66. O. Toker and H. Özbay, "Complexity issues in robust stability of linear delay-differential systems," *Mathematics of Control, Signals, and Systems*, vol. 9 (1996), pp. 386–400.
 67. O. Toker and H. Özbay, "On the rational H_∞ controller design for infinite dimensional plants," *International Journal of Robust and Nonlinear Control* vol. 6 (1996), pp. 383–397.
 68. C. Gu, O. Toker and H. Özbay, "On the two block H_∞ problem for a class of unstable distributed systems," *Linear Algebra and its Applications*, vol. 234 (1996), pp. 227–244.
 69. O. Toker and H. Özbay, "Gap metric problem for MIMO delay systems: Parameterization of all sub-optimal controllers," *Automatica*, vol. 31 (1995), pp. 931–940.
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 74. H. Özbay, M. C. Smith and A. Tannenbaum, "Mixed sensitivity optimization for a class of unstable infinite dimensional systems," *Linear Algebra and its Applications*, vol. 178, 1993, pp. 43–83.
 75. D. Enns, H. Özbay and A. Tannenbaum, "Abstract model and controller design for an unstable aircraft," *AIAA Journal of Guidance Control and Dynamics*, March-April 1992, vol. 15, No. 2, pp. 498–508.
 76. H. Özbay, "Controller reduction in the 2-block H_∞ optimal design for distributed plants," *International Journal of Control*, November 1991, vol. 54, No. 5, pp. 1291–1308.
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 78. H. Özbay and A. Tannenbaum, "On the structure of suboptimal H_∞ controllers in the sensitivity minimization problem for distributed stable plants," *Automatica*, March 1991, vol. 27, No. 2, pp. 293–305.

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110. V. Eldem, H. Özbay, H. Selbuz, and K. Özçaldıran, "Partial disturbance rejection with internal stability and H_∞ norm bound," *Proceedings of 36th IEEE Conference on Decision and Control*, San Diego CA, December 1997, pp. 4124-4129.
111. C. Hatipoglu, H. Özbay, Ü. Özgüner, T. B. Sahin, " H_∞ Controller design for automatic steering of vehicles with modeled time delays," *Proceedings of the IEEE Conference on Intelligent Transportation Systems*, Boston MA, November 1997, pp. 260-265.
112. M. Zeren and H. Özbay, "On stable H_∞ controller design," *Proceedings of the American Control Conference*, Albuquerque NM, June 1997, pp. 1302-1306.
113. K. A. Ünyelioglu, H. Özbay, S. Garg and B. Uzman, "Multi-objective controller design via optimal interpolation with an aircraft control application," *Proceedings of the 1996 IEEE International Conference on Control Applications*, Dearborn MI, September 1996, pp. 13-18.
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115. M. Zeren, H. Özbay, J. Yang, "Development of a welding process model for H_∞ control design," *Proceedings of the 34th IEEE Conference on Decision and Control*, New Orleans LA, December 1995, (**INVITED**), pp. 472-477.
116. K. Srinivasan, H. Özbay, I. Jung, "A design procedure for repetitive control systems," *Proceedings of the 1995 ASME International Mechanical Engineering Congress and Exposition*, San Francisco CA, November 1995, DSC-Vol. 57-1, pp. 581-593.
117. T. E. Peery and H. Özbay, "On H_∞ sampled-data repetitive controllers," *Proceedings of 33rd Allerton Conference on Communication, Control and Computing*, University of Illinois Urbana-Champaign, October 1995, pp. 853-862; (**INVITED**).
118. O. Toker and H. Özbay, "On the NP-hardness of solving bilinear matrix inequalities and simultaneous stabilization with static output feedback," *Proceedings of the American Control*

- Conference, Seattle WA, 1995, pp. 2525-2526.
119. O. Toker and H. Özbay, "Robustness analysis of controllers designed for active flutter suppression," *Proceedings of the American Control Conference*, Seattle WA, 1995, pp. 182-183.
 120. O. Toker and H. Özbay, "On the NP-hardness of the purely complex mu computation, analysis/synthesis, and some related problems in multidimensional systems," *Proceedings of the American Control Conference*, Seattle WA, 1995, pp. 447-451.
 121. O. Toker and H. Özbay "On the structure of H_∞ controllers," *Proceedings of 33rd IEEE Conference on Decision and Control*, Lake Buena Vista, December 1994, pp. 3949-3954.
 122. O. Toker and H. Özbay, "Suboptimal robustness in the gap metric for MIMO delay systems," *Proceedings of the American Control Conference*, Baltimore MD, June-July 1994, pp. 3183-3187.
 123. O. Toker and H. Özbay, " H_∞ Controllers for unstable distributed plants," *Proceedings of 32nd IEEE Conference on Decision and Control*, San Antonio TX, December 1993, pp. 1170-1175.
 124. T. E. Peery and H. Özbay, "On H_∞ optimal repetitive controllers," *Proceedings of 32nd IEEE Conference on Decision and Control*, San Antonio TX, December 1993, pp. 1146-1151.
 125. O. Toker and H. Özbay, "Numerical issues in the computation of H_∞ controllers for distributed plants," *Proceedings of 31st Allerton Conference on Communication, Control and Computing*, University of Illinois Urbana-Champaign, September-October 1993, pp. 535-544; **(INVITED)**.
 126. H. Özbay, "Active control of a thin airfoil: flutter suppression and gust alleviation," *Preprints of 12th IFAC World Congress*, Sydney Australia, July 1993, vol. 2, pp. 155-158.
 127. O. Toker and H. Özbay, "On suboptimal H_∞ controllers for unstable distributed plants," *Proceedings of the American Control Conference*, San Francisco CA, June 1993, pp. 2160-2164.
 128. H. Özbay and G. R. Bachmann, "Active feedback controller design for a thin airfoil," *Proceedings of the American Control Conference*, San Francisco CA, June 1993, pp. 13-17.
 129. T. E. Peery and H. Özbay, "On fixed order controllers for delay systems: discrete time case," *Proceedings of the American Control Conference*, San Francisco CA, June 1993, pp. 1030-1031.
 130. H. Özbay, "Gust alleviation for an infinite dimensional model of a thin airfoil," *Proceedings of Ninth VPI&SU Symposium on Dynamics and Control of Large Structures*, Blacksburg VA, May 1993, pp. 145-153.
 131. H. Özbay, M. C. Smith and A. Tannenbaum, "On the optimal two block H_∞ compensators for distributed unstable plants," *Proceedings of the American Control Conference*, Chicago IL, June 1992, pp. 1865-1869.
 132. H. Özbay and G. R. Bachmann, "Robust control design techniques for active flutter suppression," *Proceedings of NASA Workshop on Distributed Parameter Modeling and Control of Flexible Aerospace Systems*, Williamsburg VA, June 1992, pp. 179-191.
 133. D. Enns, H. Özbay and A. Tannenbaum, " H_∞ optimal controllers for a distributed model of an unstable aircraft," *Proceedings of 30th IEEE Conference on Decision and Control*, Brighton UK, December 1991, pp. 3020-3024.
 134. H. Özbay and J. Turi, "Robust control of an aeroelastic system modeled by a singular integro-differential equation," *Proceedings of 30th IEEE Conference on Decision and Control*, Brighton UK, December 1991, pp. 2682-2686; **(INVITED)**.
 135. H. Özbay, "Approximately optimal finite dimensional controllers in the 2-block H_∞ problem for distributed plants," *Proceedings of 29th Allerton Conference on Communication, Control and Computing*, University of Illinois Urbana-Champaign, October 1991, pp. 912-921; **(INVITED)**.
 136. J. Turi and H. Özbay, "Robust stabilization of an Aero-elastic system," *Proceedings of the 1991 IEEE International Conference on Systems Engineering*, Dayton, OH, August 1991, pp. 424-427.
 137. D. Enns, H. Özbay and A. Tannenbaum, "Numerical computation and approximations of H_∞ optimal controllers for a 2-parameter distributed model of an unstable aircraft," *Proceedings of the 1991 IEEE International Conf. on Systems Engineering*, Dayton, OH, August 1991, pp. 307-310.
 138. H. Özbay, "On the 1-block H_∞ control problem for a class of MIMO distributed systems,"

- Proceedings of 1991 American Control Conference*, Boston MA, June 1991, pp. 1642-1647.
139. H. Özbay, M. C. Smith and A. Tannenbaum, "On the two-block problem for unstable distributed systems," *Proc. of the 29th IEEE Conference on Decision and Control*, Honolulu Hawaii, December 1990, pp. 1163-1167.
 140. H. Özbay, "Computing the singular values of a Hankel operator," *Proceedings of the 2nd International Workshop on SVD and Signal Processing*, Kingston RI, June 1990, pp. 189-196.
 141. H. Özbay, M. C. Smith and A. Tannenbaum, "Controller design for unstable distributed systems," *Proceedings of the 1990 American Control Conference*, San Diego CA, May 1990, pp. 1583-1588.
 142. H. Özbay, "On the H_∞ control of unstable MIMO systems with delays," *Proceedings of the Conference on Informations Sciences and Systems*, March 1990, Princeton Univ., pp. 122—126.
 143. H. Özbay and A. Tannenbaum, "A solution to the standard H_∞ problem for multivariable distributed systems," *Proceedings of the IEEE Conference on Decision and Control*, Tampa, Florida, December 1989, pp. 1444-1445.
 144. H. Özbay and A. Tannenbaum, "On approximately optimal H_∞ controllers for distributed systems," *Proceedings of the IEEE Conference on Decision and Control*, Tampa, Florida, December 1989, pp. 1454-1459.
 145. K. Lenz, H. Özbay, A. Tannenbaum, J. Turi and B. Morton, "Robust control design for a flexible beam using a distributed parameter H_∞ method," *Proceedings of the IEEE Conference on Decision and Control*, Tampa, Florida, December 1989, pp. 2673-2678.
 146. C. Foias, H. Özbay and A. Tannenbaum, "Remarks on H_∞ optimization of multivariate distributed systems," *Proceedings of the IEEE Conference on Decision and Control*, Austin TX, December 1988, pp. 985-986.
 147. H. Özbay and C. A. Schwartz, "On the controllability of some recursive parameter estimation algorithms," *Proceedings of the Conference on Information Sciences and Systems*, Johns Hopkins University, March 1987, pp. 664-669.

c. Abstracts, Papers in Local Conferences and Technical Reports

1. A.E. Karagül, H. Özbay, "Optimal H_∞ Controller Design for a Fractional Order System with Time Delay," in *Extended Abstracts of 4th Conference on Control and Optimization with Industrial Applications (COIA 2013)*, July 2103, Borovets, Bulgaria, pp. 44—45.
2. U. Taşdelen, O. Demir, G. Kuralay, H. Özbay, B. Özgüler, "On Predictor-Based Controller Design for a Flexible Robot Arm," in *Extended Abstracts of 4th Conference on Control and Optimization with Industrial Applications (COIA 2013)*, July 2013, Borovets, Bulgaria, pp. 77—78.
3. O. Demir, U. Taşdelen, G. Kuralay, H. Özbay, B. Özgüler, "Robust Control Oriented System Identification of a Flexible Robot Arm," in *Extended Abstracts of 4th Conference on Control and Optimization with Industrial Applications (COIA 2013)*, July 2013, Borovets, Bulgaria, pp. 21—24.
4. H. Özbay, C. Bonnet, H. Benjelloun, J. Clairambault, "Global Stability Analysis of a System Modeling Cell Dynamics in AML" in *Abstracts of the 3rd Conference on Computational and Mathematical Population Dynamics (CMPD3)*, Bordeaux, France, June 2010, p. 186.
5. M. Ö. Efe, M. Debiasi, P. Yan, H. Özbay, M. Samimy, "Iterative and Batch Mode Algorithms for Modeling of Aerodynamic Cavity Flows Under Boundary Excitations," in *Abstracts of ICNPAA 2006, 6th International Conference on Mathematical Problems in Engineering and Aerospace Sciences*, Budapest, Hungary, June 2006, p. 19 (**INVITED**).
6. X. Yuan, M. Ö. Efe, H. Özbay, "On Delay-Based Linear Models and Robust Control of Cavity Flows," in *Abstracts of the papers presented at NSF-CNRS Workshop on Time Delay Systems*, Paris, France, January 2003, pp. 103-104, (**INVITED**).
7. H. Özbay, "Finite dimensional H_∞ controllers for a class of infinite dimensional systems," in *Abstracts of the Papers Presented at MATH2000* (joint meeting of Canadian Mathematical Society, Canadian

- Applied and Industrial Mathematics Society, and four other Canadian societies), Hamilton Ontario, June 2000, p. 10; **(INVITED)**.
8. H. Özbay, and S. Garg, *Stable H_∞ Controller Design for the Longitudinal Dynamics of an Aircraft*, NASA technical memorandum, 106847, National Aeronautics and Space Administration, Washington, DC, 1995.
 9. H. Özbay, "On multivariable two block H_∞ control problem," in *Abstracts of Papers Presented to the American Mathematical Society*, (Abstracts for Joint Mathematics Meetings, Cincinnati OH, January 1994), vol.15, No.1, 1994, p. 158; **(INVITED)**.
 10. C. Gu, O. Toker and H. Özbay, "On the two-block H_∞ problem for a class of unstable distributed systems," in *Abstracts of Papers Presented to the American Mathematical Society*, (Abstracts for Joint Mathematics Meetings, Cincinnati OH, January 1994), vol.15, No.1, 1994, p. 104; **(INVITED)**.
 11. O. Toker and H. Özbay, "Parametrization of suboptimal H_∞ controllers for unstable distributed plants," in *Abstracts of SIAM Conference on Linear Algebra in Signals, Systems and Control*, Seattle WA, August 1993, p. 26.
 12. H. Özbay, "Robustness of repetitive controllers: An H_∞ perspective," *Abstracts of SIAM Conference on Control and its Applications*, Minneapolis MN, September 1992, p. 10.

PhD Dissertations Supervised and Co-Supervised:

- P1. *H_∞ Optimal Repetitive Control: Continuous-Time and Sampled-Data Formulations*, Thaddeus E. Peery, 1995, Ohio State University.
- P2. *Complexity Issues in System Theory and Solution Procedures for Certain Robust Control Problems*, Onur Toker, 1995, Ohio State University.
- P3. *Strong Stabilization and Stable H_∞ Controller Design*, Murat Zeren, 1997, Ohio State University.
- P4. *Congestion Control for Next-Generation Global Internets*, Yuan Gao, (co-adviser; primary adviser J. C. Hou), 2002, Ohio State University.
- P5. *A Robust Control Theoretic Approach to Flow Control Designs for Congestion Control in Communication Networks*, Pierre-Francois D. Quet, 2002, Ohio State University.
- P6. *Control Methods for Data Flow in Communication Networks*, Peng Yan, 2003, Ohio State University.
- P7. *Optimal H_∞ Controller Design and Strong Stabilization for Time-Delay and MIMO Systems*, Suat Gümüşsoy, 2004, Ohio State University.
- P8. *Robust flow control for data communication networks*, Banu Ataslar (co-adviser; primary adviser Altuğ İftar), 2004, Anadolu University, Turkey
- P9. *Model-Based Feedback Control of Subsonic Cavity Flows – Control Design*, Xin Yuan, (co-adviser; primary adviser A. Serrani), 2006, Ohio State University.
- P10. *Leucémie aiguë myéoblastique : modélisation et analyse de stabilité*, José Luis Avila Alonso, (co-adviser; primary adviser C. Bonnet), 2014, L2S/INRIA, France
- P11. *Dwell Time Minimization of Switched Time Delay Systems*, Ahmet Taha Koru (co-adviser; primary adviser Akin Delibasi), 2017, Yildiz Tech Univ.
- P12. *Robustly and Strongly Stabilizing Low Order Controller Design for Infinite Dimensional Systems*, Veysel Yucesoy, 2018, Bilkent University.
- P13. *Observer Design and Output Feedback Stabilization of Time Varying Systems*, Saeed Ahmed, (primary adviser; co-adviser F. Mazenc, INRIA), 2018, Bilkent University.
- P14. *Optimality Based Structured Control of Distributed Parameter Systems*, Demir, 2020, Bilkent University. Okan

MS Theses Supervised

- M1. *Design of H_∞ Suboptimal Controllers for Unstable Distributed Plants*,
Onur Toker, Autumn 1992, Ohio State University.
- M2. *Robust Control Design Techniques for the Active Control of an Aeroelastic System*,
Glen R. Bachmann, Autumn 1992, Ohio State University.
- M3. *Control and Approximation of Delay Systems*,
Cemil Ulus, Winter 1994, Ohio State University.
- M4. *Fixed Order Approximation of Infinite Dimensional Systems*,
C. Anthony Bailey, Spring 1995, Ohio State University.
- M5. *Feedback Control of Temperature Fields in an Arc Welding Process*,
Jin Yang, Spring 1996, Ohio State University.
- M6. *Applications of H_∞ Theory in Repetitive Control*,
M. Baris Uzman, Summer 1997, Ohio State University.
- M7. *Identification and Control of a Multi-Stage Polyester Film Oven*,
Leslie A. Adams, Spring 1998, Ohio State University.
- M8. *Design and Gain Scheduling of Multivariable H_∞ -Based Steering Controllers for Vehicles with Modeled Time Delays*,
T. Burak Sahin, Spring 1998, Ohio State University.
- M9. *H_∞ Controller Design for Neuromusculoskeletal Systems with Multiple Afferent and Efferent Transmission Delays*,
Abhaykumar T. Kataria, Autumn 1999, Ohio State University.
- M10. *Switched H_∞ Controllers for Time-Varying Time Delay Systems*,
Rahul S. Bhojani, Autumn 1999, Ohio State University.
- M11. *Approximation of Infinite Dimensional SISO H_∞ Controllers*,
Richard J. Thomas, Winter 2000, Ohio State University.
- M12. *Infinite Dimensional Process Identification and H_∞ Control Applied to an Internal Model Controller*,
Kevin D. Starr, Summer 2000, Ohio State University.
- M13. *Application of Control Theoretic Tools to the Analysis and Design of Congestion Control Algorithms in Communication Networks*,
Sriram Chellappan, (co-advised by A. Durrezi), Summer 2002, Ohio State University.
- M14. *A New PI and PID Control Design Method and its Application to Active Queue Management of TCP Flows*,
Deniz Üstebay, June 2007, Bilkent University.
- M15. *H_∞ Based Filtering for Systems with Time Delays and Application to Vehicle Tracking*,
M. Sami Ezercan, August 2007, Bilkent University.
- M16. *Stability and Dwell Time Analysis of Switched Time Delay Systems*,
Osman S. Tapkan, September 2007, Bilkent University.
- M17. *An Optimal Solution for the Multi-Agent Rendezvous Problem Appearing in Cooperative Control*,
Fatih Kölmek, September 2008, Bilkent University
- M18. *PID Controller Design for First Order Unstable Time Delay Systems*
Gül Ezgi Arslan, July 2009, Bilkent University
- M19. *Stability Analysis and Controller Design for the Heat Equation with Time Delayed Feedback*,
Sina Yamaç Çalışkan, August 2010, Bilkent University
- M20. *Analysis of Two Types of Cyclic Biological System Models with Time Delays*,
Mehmet Eren Ahsen, July 2011, Bilkent University
- M21. *Controller Design for Haptic Systems Under Delayed Position and Velocity Feedback*,

- Ahmet Taha Koru, August 2012, Bilkent University
- M22. *Smith Predictor based Controller Design for a Flexible Robot Arm*,
Uğur Taşdelen, July 2013, Bilkent University
- M23. *Reduced Order Modeling of Infinite Dimensional Systems from Frequency Response Data*
Okan Demir, July 2014, Bilkent University
- M24. *Computation of the Optimal H^∞ Controller for a Fractional Order System*
Abidin Erdem. Karagül, July 2014, Bilkent University
- M25. *Design of P and PI Controllers for Head Positioning in Hard Disk Drives with Time Delay*
Havva Buket Koyuncu, June 2015, Bilkent University
- M26. *Design of PD Controllers for Unstable Infinite Dimensional Plants with Time Delay*
Deniz Varol, June 2015, Bilkent University
- M27. *H^∞ Filter Based Target Tracking Under Time Delayed Measurements*
Ezgi Ateş, September 2015, Bilkent University
- M28. *Design of First Order Controllers for a Flexible Robot Arm with Time Delay*
Gökçe Kuralay, May 2016, Bilkent University
- M29. *An Anti-Windup Compensator for Systems with Time Delay and Integral Action*
Dilan Öztürk, August 2017, Bilkent University
- M30. *Numerical Computation and Implementation of H-infinity Controllers for Retarded and Neutral Time Delay System*
Mustafa Oğuz Yeğın, November 2017, Bilkent University
- M31. *On Mixed H_2/H_∞ Controller Design for Systems with Time Delay*
Meysam Ghomi, July 2018, Bilkent University
- M32. *On the Structure and Implementation of the Optimal Q-Parameter in the One-Block H-infinity Control Problem*,
Çetin Taştekin, December 2020, Bilkent University

Sponsored Research

In Turkey

1. *Robust Control of Time Delayed Linear Parameter Varying Systems via Switched Controllers*, TÜBİTAK (Turkey) and EGIDE (France) Bosphorus Project; PIs: H. Özbay and F. Mazenc; January 2016 - December 2017. For the TUBITAK (project no 115E820), I am the PI and my share of the budget is 287,729 TL (97,867 USD)
2. *Control and Stabilization of Satellite Communication Units on Moving Platforms*, ASELSAN (project no. HBT-TE-2015-023), PI: H. Özbay, August 2015 – November 2016, 187,700 TL + VAT (79,671 USD)
3. *Development and Application of Robust Control Algorithms*, Sponsor: ASELSAN (project no. SST-IA-2012-134), PIs: H. Özbay and A. B. Özgüler, January 2013 – January 2014; my share of funding is 80% of 153,895 TL (69,166 USD).
4. *Development of Servo Control Algorithms*, Sponsor: ASELSAN; PI: H. Özbay (with co-PIs Ö. Morgül and A. B. Özgüler), May 2011— May 2012 (461,450 TL); my share of funding is 40% (79,891 USD)
5. *Center of Excellence for Motion Sensors and Micro System Technologies*, Sponsor: DPT (State Planning Agency); PI: O. Aytür, co-PI: H. Özbay, responsible for Control System Laboratory; April 2010 — April 2013 (total external funding is 15,000,000 TL); my share of funding is 150,000 TL (99,378 USD)
6. *Low Order Controller Design for Systems with Time Delays*; Sponsor: TÜBİTAK (Turkey) and EGIDE (France); PIs: H. Özbay and S-I. Niculescu; February 2010—January 2012; my share of funding is 11,000 TL (7,382 USD)
7. *Analysis and Control of Switched Systems with Time Delays*; Sponsor: TÜBİTAK; PI: H. Özbay, July 2006—June 2009; 100,980 TL (64,318 USD).

8. *Design of Sensor Fusion Algorithms for HERIKKS-II*; Sponsor: ASELSAN; PIs: M. Demirekler, H. Özbay, M. Kuzuoğlu; February 2006 – January 2007; my share of funding is 28,200 YTL (21,212 USD)
9. *Design of Sensor Fusion Algorithms for HERIKKS-II*; Sponsor: ASELSAN; PIs: H. Özbay and M. Demirekler; November 2004 – October 2005; my share of funding is 20,400 USD.
10. *Robust Control of Infinite Dimensional Systems*; Sponsor: European Commission, Marie Curie International Reintegration Grant; PI: H. Özbay; May 2004 — May 2006, € 80,000 (95,688 USD)

In the USA

11. *Collaborative Center of Control Science*; Sponsor: Air Force Research Laboratories, and Air Force Office of Scientific Research; PIs from OSU include K. Passino, H. Özbay, M. Samimy, J. B. Cruz, U. Ozguner, S. Yurkovich, R. K. Yedavalli, A. Serrani; September 2001 - September 2004, my share of the funding is \$327,998.
12. *Congestion Control Methods for the Edge Networks of the Internet*, PI: H. Özbay; Sponsor: SBC-Ameritech Faculty Grant through the Graduate School, OSU; July 2001 - June 2002, (\$29,865).
13. *Design, Theoretical Validation, and Empirical Evaluation of a Class of Multicast Congestion Control Schemes: Applying Feedback Control Theory to Multicast Congestion Control*, PIs: C-J. Hou and H. Özbay (50%); Sponsor: National Science Foundation (Grant No. ANI-0073725); July 2000 - June 2003; my share of funding is \$180,000.
14. *Approximation, Identification and Robust Control of Systems with Time Delays*, PI: H. Özbay; Sponsor: Asea Brown Boveri (ABB); April 2000 - September 2000, (\$9,116).
15. *Rate Based Flow Control Algorithms for High Speed Networks*, PI: H. Özbay; Sponsor: Rensselaer School of Engineering; September 1998 - September 2001, (\$180,097). This is a subcontract for my joint project with Dr. S. Kalyanaraman of RPI, that is funded through National Science Foundation, under Grant No: ANI-9806660; total project budget is \$563,725 and it is managed by RPI.
16. *An Experimental Testbed for research in advanced wireless communications*, PIs: M. Fitz, S. W. Ellingson, C-J. Hou, R. Jain, U. Mitra, H. Özbay; Sponsor: National Science Foundation (Grant No: ANI-9809018); September 1998 - August 2001, (\$1,450,203) my share of funding is \$232,032.
17. *US-Turkey Cooperative Research: Routing and Flow Control for High Speed Networks*, PI: H. Özbay; Sponsor: National Science Foundation (Grant No: INT-9809903); October 1998 - September 2001, (\$10,125).
18. *US-Turkey Planning Visit: Collaboration on integrated routing and flow control for traffic networks*, PI: H. Özbay; Sponsor: National Science Foundation (Grant No: INT-9724042); June 1997 - November 1997, (\$2,185).
19. *Computational Methods for Strongly Stabilizing H_∞ Controllers*; PI: H. Özbay; Sponsor: NASA Lewis Research Center (Grant No: NAG3-1826); April 1996 - September 1997, (\$49,999).
20. *Design Tools for Strongly Stabilizing H_∞ Controllers and Noninteracting Control of Aircraft Dynamics*, PI: H. Özbay; Sponsor: NASA Lewis Research Center (Grant No: NAG3-1723); March 1995 - March 1996, (\$55,243).
21. *Intelligent Control and Sensing via Neural Networks and Sliding Modes for Arc Welding*, PIs: S. I. Rokhlin, R. W. Richardson, Ü. Özgüner, H. Özbay (25%); Sponsor: Office of Research, The Ohio State University (Targeted Interdisciplinary Seed Grant); April 1994 - June 1996, my share is \$10,000.
22. *Controller Design for Unstable Aeroelastic Systems*, PI: H. Özbay; Sponsor: Air Force Office of Scientific Research (Grant No: F49620-93-1-0288); June 1993 - June 1994, (\$47,000).
23. *H_∞ Optimal Repetitive Control of Closed Loop Servohydraulic Testing*, PIs: K. Srinivasan and H. Özbay (50%); Sponsor: National Science Foundation (Grant No: MSS-9203418); July 1992 - December 1996, my share of funding is \$69,971.
24. *Reduced Order Robust Controller Design*, PI: H. Özbay; Sponsor: Office of Research, The Ohio State University (Seed Grant); December 1991 - June 1993, (\$15,000).
25. *Control of an Active Magnetic Bearing*, PI: H. Özbay; Sponsor: Magnetic Bearings Inc., Groton CT, University of Rhode Island Foundation; July 1990 - August 1990, (\$4,000).

Total funding (solo projects + my share in collaborative projects) is over \$1.8M:
\$1,222 K in the USA, and \$635 K in Turkey

Services

1. Professional Service

1.a Society Memberships and Services

- *Fellow of IEEE (2018)* and member of IEEE Control Systems Society since 1989
- *Chair*, Control Systems Chapter of IEEE Columbus Section, 1994—1999
- *Member, Board of Governors*, IEEE Control Systems Society, (appointed 1999 and 2013; and elected 2017—2019)
- *Ethics in Publication Committee*, IEEE Control Systems Society, (member 2014-17, chair 2017-19)
- *Vice-Chair* IFAC Technical Committee on Linear Control Systems, 2017—2023
- *Vice-Chair* IFAC Technical Committee on Networked Systems, 2005—2011
- *General Assembly Member*, European Control Association (EUCA), representing Turkey, 2013-19
- *Member of SIAM* and its Activity Group on Control Systems Theory, since 2013
- *SIAG/Control and Systems Theory Prize Selection Committee*, SIAM, 2016 and 2018
- *SIAG/Control and Systems Theory Nomination Committee*, SIAM, 2019
- *SIAG/Control and Systems Theory Steering Committee*, SIAM, 2021

1.b Editorial Board Memberships

- Area Editor for the Springer book series *Advances in Delays and Dynamics*, 2013 — present
- Associate Editor, *Automatica* (a journal of IFAC), 2001 — 2007 and 2012— 2019
- Associate Editor, *SIAM J. Control and Optimization*, 2012 — 2014
- Associate Editor, *IEEE Transactions on Automatic Control*, 1997—1999

1.c Invited Talks at Conferences, Symposia and Workshops

- Invited talk at the *CDC2019 Workshop Mathematical Theory of Control and Signal Processing in the Digital World*, Nice, France, December 2019
- Plenary talk at the *Joint IFAC Meeting 7th Symposium on Systems Structure and Control (SSSC) and 15th Workshop on Time Delay Systems (TDS)*, Sinaia, Romania, September 2019
- Plenary Lecture at the *Turkish Automatic Control Conference (TOK 2019)*, Muğla, Turkey, September 2019
- Invited talk at the *Mathematical Biology on the Mediterranean Conference and Summer School*, University of the Aegean, Karlovasi, Samos, Greece, September 2019
- Invited talk at the *ECC2014 Workshop on Time Delays in Networks: Models, Stability Theory, Control, and Numerical Methods*; European Control Conference, Strasbourg, France, June 2014
- Plenary talk at the *17th Joint International Conference on System Theory, Control and Computing (ICSTCC 2013)*, Sinaia, Romania, October 11, 2013
- Invited lecture at *Stability of Time-Delay Systems and its Applications (34th Summer School of*

- Automatic Control*), Grenoble, France, July 2013
- Semi-Plenary Lecture at the *19th International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2010), Budapest, Hungary, July 2010
 - Invited talk at the *IFAC World Congress Workshop on Delays, Feedbacks and Interconnections: from simple structures to complex networks*, Seoul, South Korea, July 2008
 - Invited talk at the *Kyoto University Workshop on Networked Control Systems*, Japan, March 2008
 - Semi-Plenary Lecture at the *17th International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2006), Kyoto Japan, July 2006
 - Plenary Lecture at the *Turkish Automatic Control Conference (TOK 2006)*, Ankara, Turkey, November 2006

1.d Conference Organization Committees

- *General Chair*, of the Joint IFAC Meeting 6th Symposium on System Structure and Control (SSSC) and 13th Workshop on Time Delay Systems (TDS), Istanbul, Turkey, June 2016
- *General Chair*. 3rd International Conference on Control and Optimization with Industrial Applications (COIA 2011) at Bilkent University, August 2011
- *General Vice-Chair*, 24th International Conference on System Theory, Control and Computing (ICSTCC); Joint Conference SINTES 24, SACCS 20, SIMSIS 24, CONTI 13, Sinaia, Romania, October 2020
- *Program Committee Co-Chair*, SIAM Conf. on Control and its Applications, Paris, France, 2015
- *Publicity Chair*. IEEE Conference on Control Applications (CCA 1996)
- *Publications Chair*.
 - ◆ 41st IEEE Conference on Decision and Control (CDC), Las Vegas, NV, 2002
 - ◆ Game Theory for Networks (GameNets), Istanbul, Turkey, 2009
- *Best Student Paper Selection Committee Chair*, IFAC World Congress, Berlin, Germany, 2020
- *Best Student Paper Selection Committee Member*, European Control Conf., Linz, Austria, 2015
- *Technical Associate Editor* for the 17th IFAC World Congress, Seoul, Korea, 2008
- *Technical Associate Editor* for the 18th IFAC World Congress, Milan, Italy, 2011
- *Technical Associate Editor* for the 19th IFAC World Congress, Cape Town, South Africa, 2014
- *Technical Associate Editor* for the 21st IFAC World Congress, Berlin, Germany, 2020
- *National Organizing Committee Member*. IFAC Symposium on Advanced Control of Chemical Processes (ADCHEM), Istanbul, Turkey, 2009
- *Technical Program Committee Member*:
 - ◆ IEEE Conference on Control Applications (CCA 2000), Anchorage, AK, 2000
 - ◆ 40th IEEE Conference on Decision and Control (CDC 2001), Orlando, FL, 2001
 - ◆ Joint 44th IEEE Conference on Decision and Control (CDC 2005) and the European Control Conference (ECC 2005), Sevilla, Spain, 2005
 - ◆ 27th IEEE Intl. Conf. on Computer Communications (INFOCOM), Anchorage, AK, 2007
 - ◆ 12th IFAC Symp. on Control in Transportation Systems (CTS), Redondo Beach, CA, 2009
 - ◆ 1st IFAC Workshop on Estimation and Control of Networked Systems (NecSys), Venice, Italy, 2009
 - ◆ Control over Communication Channels (ConCom 2009), Seoul, South Korea, June 2009
 - ◆ Joint 48th IEEE Conf. on Decision and Control (CDC) and 28th Chinese Control Conference

(CCC), Shanghai, PRC, 2009

- ◆ 19th International Symposium on Mathematical Theory of Networks and Systems (MTNS), Budapest, Hungary, 2010
- ◆ Joint 50th IEEE Conference on Decision and Control (CDC) and 2011 European Control Conference (ECC), Orlando, FL, 2011
- ◆ 3rd IFAC Workshop on Estimation and Control of Networked Systems (NecSys), Santa Barbara, CA, 2012
- ◆ 10th IFAC Workshop on Time Delays Systems, Boston, MA, 2012
- ◆ 51st IEEE Conference on Decision and Control, Maui, Hawaii, 2012
- ◆ IFAC Joint conference: 5th Symposium on System Structure and Control, 11th Workshop on Time-Delay Systems, 6th Workshop on Fractional Differentiation and its Applications, Grenoble, France, 2013
- ◆ 4th IFAC Workshop on Estimation and Control of Networked Systems (NecSys), Koblenz, Germany, 2013
- ◆ 2014 European Control Conference, Strasbourg, France, 2014
- ◆ 21st International Symposium on Mathematical Theory of Networks and Systems (MTNS), Groningen, The Netherlands, 2014
- ◆ 2015 European Control Conference, Linz, Austria, 2015.
- ◆ 1st IFAC Workshop on Linear Parameter Varying Systems, Grenoble, FR, 2015
- ◆ 54th IEEE Conference on Decision and Control, Osaka, Japan, 2015
- ◆ 14th IFAC Workshop on Time Delay Systems, Budapest, Hungary, 2018
- ◆ IFAC Joint Conference: 9th IFAC Symposium on Robust Control Design, and 2nd IFAC Workshop on Linear Parameter Varying Systems Florianópolis, Brazil, 2018
- ◆ 12th IFAC Symposium on Advances in Control Education, Philadelphia, PA, 2019
- ◆ 7th Symposium on System Structure and Control (SSSC) and 15th Workshop on Time Delay Systems (TDS), Sinaia, Romania, 2019
- ◆ 8th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys), Chicago, IL, 2019
- ◆ 24th International Symposium on Mathematical Theory of Networks and Systems (MTNS), Cambridge, UK, 2020
- ◆ 8th IFAC Symposium on System Structure and Control, and 17th IFAC Workshop on Time Delay Systems, Montreal, Canada, 2022
- ◆ 10th IFAC Symposium on Robust Control Design, Kyoto Japan, 2022
- ◆ 9th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys), Zurich, Switzerland, 2022
- ◆ 1st IFAC Workshop on Control of Complex Systems (COSY 2022), Bologna, Italy, 2022

1.e Reviewer for Funding Agencies and Technical Journals

- The Scientific and Technological Research Council of Turkey (TÜBİTAK)
- National Science Foundation USA (NSF)
- Natural Sciences and Engineering Research Council of Canada (NSERC)
- Israel Science Foundation (ISF)

- Australian Research Council (ARC)
 - National Research Foundation of South Africa (NRF)
 - Research Foundation – Flanders, Belgium (FWO)
- IEEE Trans. Automatic Control
 - IEEE Trans. Control Systems Technology
 - IEEE Trans. Education
 - IEEE/ASME Trans. Mechatronics
 - IEEE Trans. Neural Networks
 - Automatica (Journal of IFAC)
 - SIAM J. Control and Optimization
 - AIAA J. Guidance, Control and Dynamics
 - ASME J. of Dynamic Systems Meas. and Control
 - Systems & Control Letters
 - Mathematics of Control, Signals and Systems
 - Intl. Journal of Control
 - Intl. Journal of Robust and Nonlinear Control
 - ... and many other journals.

1.f Colloquium Presentations, Lectures and Short Courses

- Ohio State University (USA)
- University of Texas at Dallas (USA)
- University of Illinois, Urbana-Champaign (USA)
- University of California, Los Angeles (USA)
- Rensselaer Polytechnic Institute (USA)
- Iowa State University (USA)
- Worcester Polytechnic Institute (USA)
- Northern Illinois Univ., De Kalb (USA)
- Lehigh University (USA)
- University of Minnesota (USA)
- University of Rhode Island (USA)
- Brown University (USA)
- L2S, CentraleSupélec (FR)
- Grenoble Summer School (FR)
- Univ. Tech. Compiègne (FR)
- Kyoto University (JP)
- Konkuk University (KR)
- Zhejiang University (PRC)
- Beihang University (PRC)
- Tsinghua University (PRC)
- Middle East Tech. University (TR)
- Bilkent University (TR)
- Bogaziçi University (TR)
- Istanbul Tech. University (TR)
- Koç University (TR)
- Sabancı University (TR)

2. Consulting Activity and Short-Term Visiting Positions Held

- Visiting Researcher at INRIA Rocquencourt, France, January 2008
- Member of the Evaluation Committee for the Outstanding Achievement Awards of the Turkish Education Foundation, 2007, 2008, 2011, 2021
- Member of Science and Engineering Database Committee of TÜBİTAK ULAKBİM, for the period 2006—2009 and 2010—2012
- Member of Science and Engineering Evaluation Committee for the Innovative Project Competition of Hacettepe Üniversitesi Teknokent A.Ş., 2007 and 2008
- TOKTEN Consultant for The Scientific and Technical Research Council of Turkey (TÜBİTAK); August-September 1994
- NASA/OAI summer faculty fellow at NASA Lewis (now Glenn) Research Center, Advanced Controls Technology Branch; June-August 1994

3. Administrative Service at Bilkent University

- Associate Provost, 2014 — 2017 and 2018 — 2022
- Member of the Board of Directors, Bilkent Holding, 2019 — 2022
- Member of the Board of Governors, National Nanotechnology Research Center, 2020 — 2022
- Interim Dean, Faculty of Humanities and Letters, 2015 – 2017
- Member of the Board of Directors, Graduate School of Engineering and Sciences, 2012—2017
- Member of the Engineering Faculty Council 2012—2015
- Vice-Chair, Dept. of Electrical & Electronics Eng., 2008—2009, and 2011— 2014
- Member of the Educational Process Coordination Committee, Dept. of Electrical & Electronics Eng., 2007—2014
- Member of Graduate Studies Committee, Dept. of Electrical & Electronics Eng., 2006—2014
- Member of Strategic Planning Committee, Dept. of Electrical & Electronics Eng., 2002—2003

4. Administrative Service at The Ohio State University

a. Departmental Committees

- Graduate studies committee (member: 1995-1996, chair: 2000-2002)
- Promotion and tenure committee (member: 2001-2002, and 2003-2004)
- Control area committee (member: 1991-2004, chair: 1998-2000)
- Curriculum committee (member: 1998-1999, chair: 1999-2000)
- Graduate recruiting and financial aid committee (member: 1996-1998, chair 2003-04)
- Graduate admissions subcommittee (member: 1992-94; chair: 1994-1997)

b. College or University Committees

- Research and Graduate Council - Graduate School (elected member, representing Engineering Sciences: 2000-2004)
- Graduate Associate and Fellowship Committee - Graduate School (member 2000-2001, chair 2001-2002)
- University Senate Committee on Academic Misconduct (member: 1997-2000)

Academic/Professional Awards:

Lumley Research Award, College of Engineering, The Ohio State University, 1994

Annual Research Accomplishment Award, College of Engineering, The Ohio State University, 1996

Outstanding Service Award, Automatica—IFAC, 2007 and 2019

Outstanding Service Award, IEEE Control Systems Society, 2013

Outstanding Reviewer, Automatica—IFAC, 2014

Distinguished Teacher of the Year Award, Bilkent University, 2014

IEEE Fellow, 2018