



ONUR KAYA
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1. **Name:** Onur Kaya
2. **Date of birth:** 1979
3. **Unvanı:** Asst. Professor
4. **Education:**

Degree	Department	University	Date Received
BS	Electrical and Electronics Engineering	Bilkent University	2000
MS	Electrical Engineering	University of Maryland	2002
PhD	Electrical Engineering	University of Maryland	2005

5. **Academic Titles:**

Dates	Title	University	Department
2005-	Asst. Professor	Işık University	Electrical and Electronics Engineering

6. **Thesis Supervised**

6.1. **MS Theses**

1. Çağatay Edemen, "Channel Adaptive User Cooperation Strategies for Fading Wireless Channels," June 2006.
2. Can Yiğit (Co-advisor: Dr. Mutlu Koca), "Implementation of cooperative diversity in space frequency coded OFDM systems," Sept. 2007.
3. Mehmet Güneş, "Compress and forward based cooperation strategies in wireless networks," Oct. 2011.
4. Murat İşleyen, "A cooperative communication approach to cognitive radio," Oct. 2011.
5. Saygın Bakşi, "Partner selection in cooperative wireless networks", in progress.

6.2. **PhD Theses**

1. İsmail Sezi Bakım, Cooperative Strategies, Achievable Rates and Resource Allocation for OFDMA Channels, Oct. 2011
2. Çağatay Edemen, Design and optimization of multiuser cooperative protocols for wireless networks, in progress.

7. Publications

7.1. Journal Publications (SCI)

1. S. Bakım and O. Kaya, "Cooperative Strategies and Achievable Rates for Two User OFDMA Channels", *IEEE Trans. on Wireless Communications*, 10(12):4029 - 4034, December 2011.
2. O. Kaya and S. Ulukus, "Power Control for Fading Cooperative Multiple Access Channels", *IEEE Trans. on Wireless Communications*, 6(8):2915-2923, August 2007.
3. O. Kaya and S. Ulukus, "Achieving the Capacity Region Boundary of Fading CDMA Channels via Generalized Iterative Waterfilling", *IEEE Trans. on Wireless Communications*, 5(11):3215-3223, November 2006.
4. O. Kaya and S. Ulukus, "Ergodic Sum Capacity Maximization for CDMA: Optimum Resource Allocation", *IEEE Trans. on Information Theory*, 51(5):1831-1836, May 2005.
5. O. Kaya and S. Ulukus, "Optimum Power Control for CDMA with Deterministic Sequences in Fading Channels", *IEEE Trans. on Information Theory*, 50(10):2449-2458, October 2004.

7.2. Journal Publications (Other)

7.3. International Refereed Conference Papers

1. O. Kaya and M. İşleyen, "Power control in the cognitive cooperative multiple access channel", *Conference on Information Sciences and Systems, Princeton, NJ, March 2012*.
2. S. Bakşı, O. Kaya and Türker Bıyıkoğlu, "Optimal and Near-Optimal Partner Selection Algorithms in Cooperative OFDMA", *IEEE Wireless Communications and Networking Conference*, Paris, France, April 2012.
3. S. Bakım and O. Kaya, "Optimum Power Control for Transmitter Cooperation in OFDMA Based Wireless Networks", *will be presented at IEEE Global Communications Conference*, Workshop on Multicell Cooperation, Houston, TX, December 2011.
4. S. Bakım and O. Kaya, "Achievable Rates for Two User Cooperative OFDMA", *IEEE Global Communications Conference*, Miami, FL, December 2010.
5. C. Edemen and O. Kaya, "Channel Adaptive Encoding and Decoding Strategies and Rate Regions for the Three User Cooperative Multiple Access Channel". *IEEE Global Communications Conference*, New Orleans, LA, November-December 2008.
6. C. Edemen and O. Kaya, "Achievable Rates for the Three User Cooperative Multiple Access Channel", *IEEE Wireless Communications and Networking Conference*, Las Vegas, NV, March 2008. (*IEEE WCNC 2008 En İyi Bildiri Ödülü*)
7. O. Kaya, "Window and Backwards Decoding Achieve the Same Sum Rate for the Fading Cooperative Gaussian Multiple Access Channel", *IEEE Global Communications Conference*, San Francisco, CA, November 2006.
8. O. Kaya and S. Ulukus, "Power Control for Fading Multiple Access Channels with User Cooperation", *IEEE International Conference on Wireless Networks, Communications and Mobile Computing*, Maui, HI, June 2005.
9. O. Kaya and S. Ulukus, "Capacity Region of Power Controlled Fading CDMA: Transmit Strategies and Convexity Issues", *IEEE International Symposium on Information Theory*, Chicago, IL, June 2004.
10. O. Kaya and S. Ulukus, "Power Control and Achievable Rates for Fading CDMA: Generalized Iterative Waterfilling", *Conference on Information Sciences and Systems, Princeton, NJ, March 2004*.
11. O. Kaya and S. Ulukus, "Jointly Optimal Power and Signature Sequence Allocation for Fading CDMA", *IEEE Global Communications Conference*, San Francisco, CA, December 2003.
12. O. Kaya and S. Ulukus, "Optimum Power Control for Fading CDMA with Deterministic Sequences", *40th Annual Allerton Conference on Communication, Control and Computing*, Monticello, IL, October 2002.

7.4. Book Chapters

1. O. Kaya and S. Ulukus, Power Allocation for Cooperative Communications, In Cooperative Communications for Improved Wireless Network Transmission: Frameworks for Virtual Antenna Array Applications, M. Uysal, Ed., IGI-Global, 2009.

7.5. National Journal Publications

7.6. National Conference Papers

1. M. Güneş and O. Kaya, "Joint Decode/Compress Forward Based Cooperative Multiple Access", *IEEE SIU 2012, Fethiye, April 2012*.

7.7. Other Publications

1. C. Edemen and O. Kaya, A New Three User Markov Encoding Scheme for Cooperative Multiple Access, IEEE Communication Theory Workshop 2011 (Poster presentation)

8. Research Projects

1. "Encoding and Decoding Strategies, Achievable Rates and Resource Allocation for Cooperative Cognitive Radio Systems" Principle Investigator, Tübitak r1001 research project, 2011-2013 (In Progress).
2. "Orthogonal Frequency Division Multiplexing (OFDM)-Based Resource Allocation in Cooperative Wireless Communications", Investigator, Tübitak r1001 research project in partnership with TOBB ETÜ, 2009-2011 (Completed).
3. "Optimum resource allocation and transmit strategies for cooperative wireless communication networks", Principle Investigator, Tübitak r1001 research project, 2006-2009 (Completed).

9. Administrative Positions

- Erasmus Departmental Coordinator, EE department.

10. Memberships to Scientific and Professional Organizations

- Member, IEEE
- Member, IEEE Communications Society
- Member, IEEE Information Theory Society

11. Awards and Honors

- 2010 Işık University Award for Outstanding Achievement in Teaching.
- Best paper award, 2008 IEEE Wireless Communications and Networking Conference.

12. Courses Taught in the Past Two Years

Academic Year	Term	Course Name	Hours		Number of Students
			Theoretical	Applied	
2010-2011	Fall	EE 476 Wireless Communications	3		16
		EE 471 Communication Engineering I	3		31
		EE 225 Electrical Circuits	3	1	33
	Spring	EE 370 Introduction to Communication Systems	3	1	35

		EE 222 Circuit Theory II	3	2	29
2011-2012	Fall	EE 470 Communication Engineering I	3		16
		EE 474 Communication Simulation Techniques & Lab	2	2	11
		EE 505 Information Theory and Coding	3		5
	Spring	EE 370 Introduction to Communication Systems	3	1	28
		EE 222 Circuit Theory II	3	2	30
		EE 572 Wireless Communications	3		4

13. Other Academic Activities

Editorship:

- Editor, Turkish Journal of Electrical Engineering and Computer Sciences

Reviewer Activities:

- IEEE Transactions on Wireless Communications
- IEEE Communications Letters
- IEEE Transactions on Information Theory
- IEEE Transactions on Vehicular Technology
- IEEE Transactions on Communications
- IEEE Communications Magazine
- Tübitak Turkish Journal of Electrical Engineering and Computer Sciences
- Elsevier Signal Processing
- Elsevier Ad-Hoc Networks
- Tübitak R1001 projects (panelist, referee),
- Reviewer for several conferences on communications (TPC memberships listed below).

National and International Conference Technical Committee Memberships

- IEEE Wireless Communications and Networking Conference, 2008 (MAC symposium), 2009 (PHY symposium), 2010 (MAC and PHY symposia), 2011 (MAC and PHY symposia), 2012 (MAC and PHY symposia),
- IEEE Infocom 2011 Cognitive and Cooperative Networks symposium
- IEEE Globecom 2007 (Communication Theory symposium), 2008, 2009 and 2010 (Wireless Communication symposia), 2011 (Cognitive Radio Networks and Wireless Communication symposia), 2012 (Cognitive Radio Networks symposium)
- IEEE International Conference on Communications, 2008 (Wireless Communication symposium), 2009 and 2010 (Communication Theory and Wireless Communication symposia), 2011 (Cognitive Radio Networks and Wireless Communication symposia), 2012 (Adhoc and Sensor Networks and Wireless Communication symposia)
- IEEE PIMRC 2010 Track 1, 2011 WACC and CRSM symposia
- IEEE Wimob 2011, 2012
- IEEE IWCMC 2011 Comm and Inf. Theory symposium,
- IEEE SIU 2010, 2012.