

# PUBLICATIONS

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### Refereed Journals

1. M.Sert, B.Baykal and A.Yazıcı. Structural and Semantic Modeling of Audio for Content-based Querying and Browsing. *Lecture Notes in Artificial Intelligence (LNCS)*, Flexible Query Answering Systems, vol.4027:319-330, 2006.
2. G.Shah, O.B.Akan, M.Bozyiğit and B.Baykal. Real-Time Coordination and Routing in Wireless Sensor and Actor Networks. *Lecture Notes in Computer Science (LNCS)*, Next Generation Teletraffic and Wired/Wireless Advanced Networking, vol.4003:365-383, 2006.
3. O.B.Akan and B.Baykal. Handoff Performance Improvement with Latency Reduction in Next Generation Wireless Networks. *ACM/Kluwer Wireless Networks*, 11(3):319-332, 2005.
4. C.Toker, S. Lambotharan, J.A. Chambers and B. Baykal. Joint Spatial and Temporal Channel Shortening Techniques for Frequency Selective Fading MIMO Channels. *IEE Proceedings on Communications*, 152(1):89-94, 2005.
5. S.Altuntaş and B.Baykal. Mobile Multiaccess IP: A Proposal For Mobile Multi-Access Management in Future Wireless IP Networks. *Computer Networks*, vol.47(4):443-598, 2005.
6. B.Baykal. Blind Channel Estimation via Combining Autocorrelation and Blind Phase Estimation. *IEEE Transactions on Circuits and Systems I: Regular Papers*, 51(6):1125-1131, 2004.
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8. I.Özçelik, İ.Kale and B.Baykal. Recursive Least Squares Implementation of the Quadratically Constrained IIR Filter. *IEEE Signal Processing Letters*, 11(2):144-147, 2004.
9. S.Ozaydin and B.Baykal. Matrix quantization and mixed excitation based linear predictive speech coding at very low bit rates. *Speech Communication*, 41:381-392, 2003.
10. B.Baykal and A.G.Constantinides. Matched filtering for CMA-based blind channel estimation. *IEE Electronics Letters*, 39:1285-1287, 2003.
11. O.Ertuğ, B.Baykal and B.Sayraç. Methodology for Performance Analysis of Randomly-Spread CDMA Systems over Multipath Fading Channels via Crosscorrelation Matrix Non-Asymptotic Average Eigenvalue Densities. *IEE Electronics Letters*, 39:1210-1212, 2003.
12. B.Baykal, O.Tanrikulu, J.A.Chambers and A.G.Constantinides. A new family of blind adaptive equalization algorithms. *IEEE Communication Letters*, 3(4):109-110, 1999.
13. B.Baykal and A.G. Constantinides. Sliding window adaptive fast QR and fast QR-Lattice algorithms. *IEEE Transactions on Signal Processing*, 46(11):2877-2887, 1998.
14. O.Tanrikulu, B.Baykal, A.G.Constantinides, and J.A.Chambers. Soft constraint satisfaction (SCS) blind channel equalisation algorithm. *International Journal of Adaptive Control and Signal Processing*, 12(2):117-134, 1998.
15. A.Saranli and B.Baykal. Complexity reduction in radial basis function (RBF) networks by using radial B-spline functions. *Neurocomputing*, 18(1-3):183-194, 1998.
16. B.Baykal and A.G.Constantinides. Order-recursive underdetermined recursive least-squares adaptive algorithms. *Signal Processing*, 63(3):241-247, 1997.
17. B.Baykal and A.G.Constantinides. A neural approach to the underdetermined-order recursive least-squares adaptive filtering. *Neural Networks*, 10(8):1523-1531, 1997.

18. O.Tanrikulu, B.Baykal, A.G.Constantinides, and J.A.Chambers. Residual echo signal in critically sampled sub-band acoustic echo cancellers based on IIR and FIR filter banks. *IEEE Transactions on Signal Processing*, 45(4):901-912, 1997.
19. B.Baykal and A.G.Constantinides. Underdetermined-order recursive least-squares adaptive filtering, the concept and algorithms. *IEEE Transactions on Signal Processing*, 45(2):346-362, 1997.

## Refereed Conferences and Workshops

1. A.Irci, A.Saranlı and B.Baykal, "On Optimal Resource Allocation in Multifunction Radar Systems.", *IEEE Radar Conference 2006*
2. A.Yazıcı and B.Baykal, "Block Transmissions on Orthogonal Carriers.", *VTC-2006 Fall*
3. F.Bayramoğlu, A.O.Yılmaz and B.Baykal, "Sub-Graph Approach In Iterative Sum-Product Algorithm.", *Turbo Coding 2006*
4. M.Sert, B.Baykal, and A.Yazıcı, "Generating Expressive Summaries for Speech and Musical Audio Using Self-similarity Clues.", *ICME-2006*
5. M.Sert, B.Baykal, and A.Yazıcı, "A Robust and Time-efficient Fingerprinting Model for Musical Audio.", *ISCE-2006*
6. I.Özçelik, İ.Kale and B.Baykal, "Decision Feedback Equalizer with the Blind Matched Filter.", *ISCAS-2005*
7. M.Sert, B.Baykal, "Web-based Query Engine for Content-based and Semantic Retrieval of Audio.", *ISCE-2004*
8. M.Sert, B.Baykal, "An Approach to the Semantic Modeling of Audio Databases.", *ICETE-2004*
9. I.Özçelik, İ.Kale and B.Baykal, "Blind MLSE Based on the Matched Filter Estimation Using the CMA.", *ISCAS-2004*
10. C.Toker, S. Lambotharan, J.A. Chambers and B. Baykal, "Channel Shortening Filter Design Based on Polynomial Methods.", *VTC-2004 Spring*
11. O.Ertug, B.Baykal and B.Ünal, "Spatial Receive Diversity versus Beamforming: On The Optimal Antenna Usage Strategies with Multiantenna RAKE Multiuser Receivers over Multipath Fading CDMA Channels." *European Wireless 2004.*
12. C.Toker, S. Lambotharan, J.A. Chambers and B. Baykal, "Quasi Orthogonal Space Time Block Codes with Feedback And Transmit Beamformers.", *London Communications Symposium 2003.*
13. M.Sert and B.Baykal, "A Web Model for Querying, Storing, and Processing Multimedia Content.", *IASTED International Conference on Information and Knowledge Sharing (IKS-2003).*
14. S.Kılıç, N.Gençer and B.Baykal, "Comparison of Methods for Extracting of Evoked Potentials.", *EMBS-2003.*
15. O.B.Akan and B.Baykal, "A QoS-Aware Handoff using RSVP in Next Generation Wireless Networks.", *ISCC-2003*
16. O.Ertuğ, B.Ünal, B.Baykal and M.Yücel, "Maximum Total Outage Capacity of Randomly-Spread Coded-CDMA with Linear Multiuser Receivers over Multipath Fading Channels.", *ISCC-2003*
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18. O.Ertuğ, B.Baykal and B.Ünal, "A New Approach to Unified Performance Analysis of Randomly-Spread CDMA Systems over Multipath Fading Channels via Crosscorrelation Matrix Non-Asymptotic Average Eigenvalue Distributions.", *PIMRC-2003*
19. I.Özçelik, İ.Kale and B.Baykal, "A Novel Procedure for Channel Estimation Through the CMA and its Use in Different MLSD Setups.", *ICECS-2003*
20. I.Özçelik, B.Baykal and İ.Kale, "Blind Adaptation of a Matched Filter Using the Constant Modulus Algorithm Coupled with an Optional Correction Method.", *ISSPA-2003*
21. O.B.Akan and B.Baykal, "Dynamic SLA Management in Cellular DiffServ Networks.", *ICT-2003*
22. I.Ozçelik, I.Kale and B.Baykal, "Recursive Quadratically Constrained Least Squares Bias-Free IIR System Identification Via Variable Loading.", *MWSCAS-2002*
23. B.Baykal, O.E.Akdemir and O.B. Akan. "An IP multicast handoff scheme with focus on IGMP sourced latency." *IEEE International Conference on High Speed Networks and Multimedia Communications 2002*

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25. O.Ertug, B.Unal and B.Baykal. "Spectral efficiency and error-exponents of randomly-spread CDMA with linear multiuser receivers over multipath Rayleigh fading channels." *International Zurich Seminar on Broadband Communications 2002*
26. O.Ertug, B.Baykal and B.Unal. "Space-Time-Frequency Decorrelating Decision-Feedback Multiuser Detector Over Fast-Fading Multipath Channels For Synchronous DS-CDMA Systems." *VTC-Fall 2001*.
27. O.Ertug, B.Baykal and B.Unal. "Time-Frequency Decision-Driven Multiuser Detectors over Fast-Fading Multipath Channels for Synchronous DS-CDMA Systems." *PIMRC 2001*.
28. S. Ozaydin and B.Baykal. "A 1200 bps Speech Coder With LSF Matrix Quantization." *ICASSP 2001*
29. S. Ozaydin and B.Baykal. "Matrix Based Speech Coder at 1200 bps." *ISCAS 2001*
30. S. Ozaydin and B.Baykal. "Multistage Matrix Quantization for Very Low Bit Rate Speech Coding." *IEEE Workshop on Signal Processing Advances in Wireless Communications, SPAWC 2001*.
31. O.Ertug and B.Baykal. "Time-frequency decorrelating decision-feedback multiuser detector over fast-fading multipath channels for synchronous DS-CDMA systems." *IEEE Workshop on Signal Processing Advances in Wireless Communications, SPAWC 2001*.
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33. O.Ertug and B.Baykal. "On The Comparative Analysis of Pre-combining and Post-combining Interference Suppression In Time-Frequency Decision-Driven Multiuser Detectors Over Fast-Fading Multipath Channels For Synchronous DS-CDMA Systems." *3G Wireless 2001*
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36. B.Baykal, O.Tanrikulu, and J.A.Chambers. "Adaptive soft-constrained satisfaction (SCS) algorithms for fractionally-spaced blind equalizers." In *Proceedings of the ICASSP-97*, volume 3, pages 1853-1856, April 1997.
37. O.Tanrikulu, B.Baykal, A.G.Constantinides, and J.A.Chambers. "Constant modulus blind equalisation algorithms under soft constraint satisfaction." In *Proceedings of the ICASSP-97*, volume 3, pages 2517-2520, April 1997.
38. A. Saranlı and B. Baykal. "Chaotic time-series prediction and the relocating LMS (RLMS) algorithm for radial basis function networks." In *Proceedings of the EUSIPCO-96*, volume 2, pages 1247-1250, September 1996.
39. B.Baykal, O.Tanrikulu, and A.Constantinides. "Asymptotic analysis of the underdetermined recursive least-squares algorithm." In *Proceedings of the EUSIPCO-96*, volume 2, pages 1397-1400, September 1996.
40. O.Tanrikulu, B.Baykal, A.G.Constantinides, and J.A.Chambers. "Residual signal in sub-band acoustic echo cancellers." In *Proceedings of the EUSIPCO-96*, volume 1, pages 21-24, September 1996.
41. B.Baykal and A.G. Constantinides. "Order recursive underdetermined recursive least-squares algorithms." *Proceedings of the ICT-96*, volume 1, pages 136-139, April 1996.
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44. O.Tanrikulu, B.Baykal, and A.G.Constantinides. "Some studies on the computation and estimation of cumulants." In *Proceedings of the ATHOS Workshop*, (Imperial College, London, UK), May 1993.

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## **Others**

1. B.Baykal, *Underdetermined Recursive Least-Squares Adaptive Filtering*. PhD thesis, Imperial College of Science, Technology and Medicine, July 1995.
2. B.Baykal, "Applications of Lagrange programming neural networks: Evaluation of various transforms and spectral estimation techniques," Master's thesis, Imperial College of Science, Technology and Medicine, Sept. 1992.