



CURRICULUM VITAE

Ashraf Akram Tahat

Department of Communications Engineering King Abdullah II School of Engineering Princess Sumaya University for Technology Amman, Jordan

> Phone: +962 535-9949 (Work) Fax: +962 6 534-7295 E-mail: <u>tahat@psut.edu.jo</u> Homepage: www.DrTahat.com

1. Education

- Ph.D. Electrical Engineering (Communications and Signal Processing) 2002, Illinois Institute of Technology, Chicago, Illinois, USA.
- M.Sc. Electrical Engineering (Electronics and Electromagnetics) 1993, Illinois Institute of Technology, Chicago, Illinois, USA.
- B.Sc. Electrical Engineering (General) 1992, Illinois Institute of Technology, Chicago, Illinois, USA.

2. Ph.D. Dissertation

MULTI-USER OFDM CHANNEL ESTIMATION TECHNIQUES FOR SDMA, Illinois Institute of Technology, Chicago, Illinois, USA.

3. Employment

Academic Positions

- Associate Professor, Department of Communications Engineering, Princess Sumaya University for Technology, Amman, Jordan. October 13, 2010 – Present
- Assistant Professor, Department of Communications Engineering, Princess Sumaya University for Technology, Amman, Jordan.
 February 27, 2005 – October 12, 2010
- Visiting Professor, Department of Electrical and Computer Engineering, McGill University, Montreal, Quebec, Canada.
 September 2, 2012 - September 6, 2013
- Adjunct Professor, Department of Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA.
 August 30, 2002 - May 18, 2003
- Research and Teaching Assistant, Department of Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA.





August 27, 2002 - May 15, 2002

 Teaching Assistant, Department of Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA.
 January 6, 1994 - December 15, 1996

Administrative Positions

- Chairman of Department of Communications Engineering, King Abdullah II School of Engineering, Princess Sumaya University for Technology, Amman, Jordan. September 16, 2010 February 6, 2012.
- Vice Chairman, IEEE Jordan Section. November 10, 2018 Present

4. Research Interests

I serve as an Associate Professor in the Department of Communications Engineering, where I was originally appointed as an Assistant Professor in 2005. New computational algorithms, techniques and systems applied to the investigation and analysis of digitally processing signals that bear information have been the primary focus of my research interests. Nevertheless, my great passion for the general electrical engineering and associated sciences, that involve information and communications systems, overlap several sub-areas encompassing: machine learning, localization, channel modeling and estimation, antenna array processing, adaptive filtering, and recently encryption and the general physical layer security aspects and applications thereof to telecommunications systems of voice and data. Moreover, I regularly serve as a reviewer for scientific journals and granting agencies worldwide. I am often invited to contribute and serve on the Technical Program Committees of prominent conferences.

5. Membership in Scientific Societies and Associations

- Senior Member of IEEE
- Senior Member IEEE-Eta Kappa Nu electrical engineering Honor society
- Member of Tau Beta Pi engineering Honor society
- Member of Jordan Engineers Association

6. Honors and Awards

- [A1.] IEEE Outstanding Volunteer Award, Vice Chairman Jordan Section post and Executive Committee Member, Amman. Jordan, June 2022.
- [A2.] Faculty Award for Supervising the Third Place winner of the Senior Design Graduation Project Competition in the Electrical Engineering category, organized by the Jordan Engineers Association. February 2020.
- [A3.] Best Research Paper Presentation in the International Conference on Big Data and Smart Computing (ICBDSC2018) part of ICSIM conference held in Casablanca, Morocco. January 2018).
- [A4.] Supervised Best Student Application Paper for IEEE Standards Education Committee (SEC) program, which was selected for publication in the Standards Education eMagazine, February 2013.
- [A5.] Faculty Award for Supervising the First Place winner of the Senior Design Graduation Project Competition in the Electrical Engineering category, organized by the Jordan Engineers Association. January 2012.





- [A6.] Elevated to a Senior Member grade of IEEE, November 2010.
- [A7.] Philadelphia University Best Invention Award, April 2010. For U.S. Patent US007385617B2.
- [A8.] Scientific Innovations and Inventions Award, "The Arabian Pioneers and Innovators Forum," December 2008.
- [A9.] National Technology Parade Award, supervised the First Place winner of Best Senior Design Graduation Project competition in the Mobile Applications category. May 2008.
- [A10.] Supervised the Second Place winner of the IET/IEE Best Senior Design Graduation Project competition, October 2007.
- [A11.] Outstanding Performance Award at 3Com Corporation (US Robotics), USA, June 1998.

7. Fellowships and Scholarships

- European Union Erasmus Mundus External Co-operation Window Faculty Scholarship, Berlin, Germany, 2009-2010.
- Research and Teaching Assistant Scholarships, Department of Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA. August 27, 2002 - May 15, 2002
- Teaching Assistant Scholarship, Department of Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA. January 6, 1994 - December 15, 1996

9. Teaching Experience

Graduate Courses

23702 Advanced Digital Communications (all new course content and material) 20719 Special Topics in Electrical Engineering-WIoT (advanced content). 20701 Graduate Research Seminar.

• Undergraduate Courses

- 21221 Electric Circuit Analysis I
- 21229 Electric Circuits Laboratory
- 21331 Electronics II (at Illinois Institute of Technology)
- 21338 Electronics Laboratory (at PSUT and at Illinois Institute of Technology)
- 23551 Signals and Systems (at PSUT and at Illinois Institute of Technology)
- 23357 Analog Communications
- 23451 Digital Communications
- 23459 Communications Laboratory
- 23552 Cellular Communications
- 23558 Cellular Communications Laboratory
- 23556 Satellite Communications
- 23581 Long-Term Evolution Systems (Special Topics in Communications Eng.)
- 23576 Wireless Internet of Things
- 23592 Senior Design Projects.

10. Supervision of Graduate Research

I supervised the following master's degree graduate students research and theses:





- 1. MSc. Electrical Engineering, Thesis & Research Supervisor Mrs. Tahani Bani-Yaseen, "Denial-of-Sleep Attack Behavioral Detection in NB-IoT using Deep Learning," June 2020.
- 2. MSc. Electrical Engineering Thesis & Research Supervisor Mrs. Walaa Al-Rashdan, "Fingerprinting-Based Positioning for Massive MIMO Wireless Systems using Big Data Machine Learning Algorithms," February 2020.
- 3. MSc. Electrical Engineering Thesis & Research Supervisor Mr. Anas Al-Ashqar "Performance Evaluation of Quadrature Spatial Modulation QSM System under 3-D Vehicular to Vehicular V2V Wireless Channel," February 2020.
- 4. MSc. Electrical Engineering Thesis & Research Supervisor Mr. Mohammad Elroud "Wireless IoT Security," (Active).

11. Grants

- Machine Learning Algorithms Practical Evolution for Bluetooth Low Energy Indoor Localization Systems, 2018, Faculty for Factory Program, \$5700.
- LTE-A Down-Link Performance Analysis Deploying Different MIMO Antenna Configurations, 2010, IEEE Standards Mini-Grants, \$1000.
- Solar Energy Water Heater Remote Monitoring and Control System, 2009, Faculty for Factory Program, \$5000.
- Optical Wireless System, Ashraf Tahat, Yazan Alqudah, and Mansour Abbadi, Research proposal submitted to Scientific Research Fund, 2011.
- A Study of Jordan's Expanding Wireless Infrastructure Impact on Health, Yazan Alqudah, Ashraf Tahat, and Mansour Abbadi, Research proposal submitted to Scientific Research Fund, 2010.

12. Patents

Tahat, Ashraf Akram "Methods for Multi-User Broadband Wireless Channel Estimation," U.S. Patent US007385617B2, June 10, 2008.

13. Membership of Committees

National and International

- IEEE Jordan Section Vice-Chairman, Member of the Executive Committee.
- Member of the Technical Program Committee for the 2020 IEEE 31st Annual International Symposium on Personal, Indoor and Mobile Radio Communications: Track 1 PHY and Fundamentals: PIMRC'20 Track 1 PHY & Fundamentals.
- TPC member for 2020 12th International Symposium on Communication Systems, Networks & Digital Signal Processing (CSNDSP2020).
- I was often invited to serve on the Technical Program Committees of prominent conferences, where I frequently did contribute.
- Orange-Jordan Arabic Mobile Applications Competition at The Jordan Telecom Group Headcounters – Member of Supreme Committee of Judges and Referees. 6/2011.
- National Technology Parade, Member of Committee of Judges and





Referees. 11/2009.

• University

- PSUT IEEE Student Branch Counselor. 11/2018-4/2020.
- PSUT IEEE Communications Society (ComSoc) Student Chapter Adviser. 1/2019-Present.
- Member of Scientific Research Counsel of the Deanship of Graduate Studies and Scientific Research. 10/2/2020 Present.
- Graduate Studies Committee of King Abdullah II School of Engineering, Member. 10/2/2019-Present.
- Member of New Academic Program Development Committee, Dept. of Communications Engineering- King Abdullah II School of Engineering. 10/2019-1/2020.
- Hiring Committee Member of new Teaching Assiatnts and Laboratory Instructors, Dept. of Communications Engineering- King Abdullah II School of Engineering. 12/2019-6/2020.
- New Academic Study Programs and Plan Development Committee,
 Dept. of Communications Engineering- King Abdullah II School of Engineering. 1/2019 – 6/2019
- New Faculty Members Hiring Committee, Dept. of Communications Engineering- King Abdullah II School of Engineering. 04/2018-06/2018
- Member of the King Abdullah II School of Engineering College Counsel (Weekly meetings) at PSUT. 08/2018-8/2019.
- Head of a Receiving Committee by the Tenders and Purchasing at PSUT.
 Receive and inspect technical specifications of Optical Communications
 Laboratory Equipment. 7/2019.
- Head of a Receiving Committee by the Tenders and Purchasing at PSUT. Receive and inspect technical specifications of Digital Communications Laboratory Equipment. 6/2018.
- Industry Relations Committee of the King Abdullah II School of Engineering. 10/2016-5/2017
- Graduate Studies Committee of the King Abdullah II School of Engineering. 10/2016-8/2017.
- Head of the Curricula Development Committee at PSUT. 10/2016-06/2017.
- Member of the King Abdullah II School of Engineering College Counsel at PSUT. 10/2016-06/2017
- The King Abdullah II School of Engineering College Counsel at PSUT, Chairman of the Department of Communications Engineering. 10/2010-02/2012.
- Member of the University Counsel of PSUT, Chairman of the Department of Communications Engineering. 10/2010-08/2011.

14. Professional and Scientific Meetings

Scientific Meetings Organized

• Steering committee member of El-Hassan Science Park annual workshop "Technology Commercialization Program" 2005, 2007, 2009.





- Attended and promoted several workshops on Entrepreneurship and innovation at PSUT and Royal Scientific Society (RSS). 2005, 2007, 2008, 2010.
- Participated in organizing a Patent Drafting workshop organized by WIPO and RSS and was a session speaker. 2009.
- Organized several industry seminars on PSUT campus related to the students field of study, including recently jointly with IEEE on 5G Cellular Systems, and a seminar on 6G directions and visions. 12/2018 and 5/2019.

Participation in Scientific meetings

- The Fifth International Conference on Fog and Mobile Edge Computing (FMEC 2020), (Virtual) Paris, France, 30/6-3/7/2020.
- British Council and Higher Council for Science and Technology (HCST) Newton-Khalidi Fund Workshop. Amman, Jordan, 11/2019.
- Phi Research Forum/Phi Science Organization. Dead Sea, Jordan, 8/2019.
- IEEE Jordan ComSoc and IEEE Signal Processing Joint Chapter Workshop. Amman, Jordan, 7/2019.
- IEEE Conference on Cognitive and Computational Aspects of Situation Management (CogSIMA). Las Vegas, USA, 4/2019.
- British Council Workshop on Collaboration/British council & Ministry of Higher Education, Amman, Jordan, 11/2018.
- Mobile Applications Competition at the Jublee School, member of Judges and Referees. Amman, Jordan, 5/2018.
- International Researcher Development Week at the University of Granada. Granada, Spain, 7/2018.
- EU Horizon 2020 Workshop with Higher Counsel for Science and Technology (HCST). Amman, Jordan, 4/2018.
- International Conference on Big Data and Smart Computing/ International Conference on Software Engineering and Information Management (ICSIM2018). Casablanca, Morocco, 1/2018.
- World Science Forum 2017. Dead Sea, Jordan, 11/2017.
- Study in Europe Day. Amman, Jordan, 10/2017.
- IEEE International Conference on Computer and Information Technology (CIT). Helsinky, Finland, 8/2017.
- Attended and promoted several workshops on Entrepreneurship and innovation at PSUT and Royal Scientific Society (RSS). 2005, 2007, 2008, 2010.

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15. <u>Participation in or organization of curricular and/or extracurricular activities</u>





Provide bulleted or numbered list with name, place, date of event and other relevant details

16. Selected Publications

- Papers in refereed journals
- [JI.] Tahani Bani-Yaseen, **Ashraf Tahat**, Kira Kastell, Talal A Edwan, "Denial-of-Sleep Attack Detection in NB-IoT Using Deep Learning," Journal of Telecommunications and the Digital Economy, Sep 2022.
- [J2.] Talal A. Edwan, **Ashraf Tahat**, Halim Yanikomeroglu, Jon Crowcroft "An Analysis of a Stochastic ON-OFF Queueing Mobility Model for Software-Defined Vehicle Networks," IEEE Transactions on Mobile Computing, May 2022.
- [J3.] **Tahat, A**; Smadi, M; Syouf, M "A Practical Evaluation of ML Algorithms for a Tag-Based BLE Indoor Positioning System," International Journal of Online and Biomedical Engineering (iJOE), vol. 16, no. 8, July 2020, pp. 39-54.
- [14.] Tahat, N; **Tahat**, **A** " Identity-based threshold group signature scheme based on multiple hard number theoretic problems," International Journal of Electrical and Computer Engineering, vol. 10, no. 4, August 2020, pp. 3695-3701.
- [J5.] A.Edwan, T; **Tahat, A**; Hammouri, S; Hashem, L; Da'boul, L "An Intelligent and Automated Approach for Smart Minimarkets," International Journal of Computational Intelligence Systems, vol. 13, no. 2, June 2020, pp. 852-863.
- [J6.] Al-Rashdan, W; **Tahat, A** "A Comparative Performance Evaluation of Machine Learning Algorithms for Fingerprinting Based Localization in DM-MIMO Wireless Systems Relying on Big Data Techniques," IEEE Access, vol. 8, June 2020, pp. 109522-109534.
- [J7.] Hijazi, M; Tahat, N; **Tahat, A**; Abdelrahim, R; Ismail, E "Authenticated Encryption Scheme Based on ECDLP and DLP," Applied Mathematics and Information Sciences, vol. 14, no. 3, May 2020, pp. 425-430.
- [J8.] Tahat, N; **Tahat, A**; Albadarneh, R; A.Edwan, T "Design of Identity-Based Blind Signature Scheme Upon Chaotic Maps' International Journal of Online and Biomedical Engineering (iJOE), vol. 16, no. 5, May 2020, pp. 104-118.
- [J9.] Alashqar, A; **Tahat, A**; Mesleh, R "Performance Analysis of Variant MIMO Systems Over 3-D Vehicular to Vehicular Channel," IEEE Access, vol. 8, April 2020, pp. 73250-73258.
- [J10.] Tahat, N; **Tahat, A**; Abu-Dalu, M; Albadarneh, R; Abdallah, A "A new RSA public key encryption scheme with chaotic maps," International Journal of Electrical and Computer Engineering, vol. 10, no. 2, April 2020, pp. 2088-8708.
- [J11.] Tahat, N; Abu-Dalu, M; Albadarneh, R; **Tahat, A** "Efficient pilot decontamination schemes in 5G massive MIMO systems," Electronics, vol. 8, no. 1, January 2019, pp. 1-26.
- [J12.] **Tahat, A**; Kaddoum, G; Yousefi, S; Valaee, S; Gagnon, F "A Look at the Recent Wireless Positioning Techniques With a Focus on Algorithms for Moving Receivers," IEEE Access, vol. 4, September 2016, pp. 6652 6680.
- [J13.] **Tahat, A**; Kheetan, Y; Sacca, A "Blood-Pressure Measurement and Management System Based on a Smartphone," International Journal of On-Line





- Engineering (iJOE), vol. 9, no. 5, June 2013, pp. 17-24.
- [J14.] **Tahat, A**; Jamal, A; Kalbouneh, M "Enhanced Particle Wireless Communications Education via Blending of Instructional Tools," International Journal of Interactive Mobile Technologies (iJIM), vol. 7, no. 2, April 2013, pp. 63-72.
- [J15.] Al-Kokhon, S; **Tahat, A** "LTE-A Down-Link Performance Analysis Deploying different MIMO Antenna Configurations," IEEE Standards Education eMagazine, vol. Q1-2013, March 2013, 1-8.
- [J16.] **Tahat, A**; Galatsanos, N "Relevance Vector Machines for Enhanced BER Probability in DMT-Based Systems, "Journal of Electrical and Computer Engineering, vol. 2010, June 2010, pp. 1-8.
- [J17.] **Tahat, A** "Mobile Messaging Services-Based Personal Electrocardiogram Monitoring System," *International Journal of Telemedicine and Applications*, vol. 2009, August 2009, pp. 1-7.
- [J18.] **Tahat, A** "Low-Complexity Multi-User Wireless Broadband OFDM Channel Estimation," The Mediterranean Journal of Electronics and Communications, vol. 4, no. 4, October 2008, pp. 126-134.
 - Conference Presentations
- [C1.] **Ashraf Tahat**, Azmi Alzaben, Lubna Sad Al Dine, Sara Abbad, Chamseddine Talhi "An Evaluation of Machine Learning Algorithms in an Experimental Structural Health Monitoring System Incorporating LoRa IoT Connectivity," IEEE International Instrumentation & Measurement Technology Conference (I2MTC 2022), May 2022.
- [c2.] **Tahat, A**; A.Edawn, Al-Sawwaf, H; Al-Baw, J; Amayreh, M "Simplistic Machine Learning-Based Air-to-Ground Path Loss Modeling in an Urban Environment," The Fifth International Conference on Fog and Mobile Edge Computing (FMEC), July 2020, Paris (virtual), France, pp. 1-6.
- [C3.] **Tahat**, **A**; Mohammad, A; Abu-Khlaif, Q; Alqatarneh, Q; Abu-Shamma, Z; Saraereh, O "A Semi-Automated User-Centric Decision System for Green Communications Incorporating the Particle Swarm Optimization Algorithm," International Symposium on Networks, Computers and Communications (ISNCC), June 2019, Istanbul, Turkey, pp. 1-6.
- [C4.] **Tahat, A**; Edwan, A; Murar, N; Qutob, O; Ayman, L; Mbaideen, D "Optimal Decision on Placement of an Auxiliary Wireless Arial Base Station using Artificial Bee Colony Algorithm," International Conference on Advanced Communications Technologies and Networking (CommNet), April 2019, Rabat, Morocco, pp. 1-6.
- [C5.] **Tahat, A**; Abukhalaf, M; Edwan, T; Saraireh, O "Uncovering Age Progression in Wireless Signal Propagation Modeling using Decisions of Machine Learning Classifiers," IEEE Conference on Cognitive and Computational Aspects of Situation Management (CogSIMA), April 2019, Las Vegas, USA, pp. 153-158.
- [c6.] Almajali, E; Hamid, A; Alja'afreh, S; **Tahat, A** "Interpreting Trasmitarrays Far-Field Performance Using Its Near Focal Region Fields," Advances in Science and Engineering Technology International Conferences (ASET), March 2019, Dubai, UAE, pp. 1-4.
- [C7.] **Tahat, A**; Aburub, R; Al-Zyoude, A; Talhi, T "A Smart City Environmental Monitoring Network and Analysis Relying on Big Data Techniques,"





- International Conference on Software Engineering and Information Management (ICSIM2018), January 2018, Casablanca, Morocco, pp. 82-86.
- [cs.] Tahat, A; D'Amours, C; Champagne, B "Subspace decomposition channel estimation for multiple virtual MIMO SC-FDMA systems," IEEE International Conference on Computer and Information Technology (CIT), August 2017, Helsinki, Finland, pp. 81-86.
- [c9.] D'Amours, C; Champagne, B; Dahmane, A; and **Tahat, A** "Channel Estimation Using Subspace Decomposition for SC-FDMA Systems," IEEE 80th Vehicular Technology Conference, September 2014, Vancouver, Canada.
- [C10.] **Tahat, A**; Champagne, B; and D'Amours, C "Subspace Decomposition Approach to Multi-User MIMO Channel Estimation in SC-FDE Systems," IEEE 24th International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC), September 2013, London, UK,.
- [C11.] **Tahat, A**; and M. Taha, "Statistical Tuning of Walfisch-Ikegami Propagation Model Using Particle Swarm Optimization," IEEE 19th Symposium on Communications and Vehicular Technology (SCVT), November 2012, Netherlands.
- [C12.] **Tahat, A**; Jamal, A; Kalbouneh, M; Jaber, H "Blending of Learning Tools for Enhanced Particle Wireless Communications Education," 6th Interactive Mobile & Computer Aided Learning International Conference (IMCL), Amman, Jordan, November 2012.
- [C13.] **Tahat, A**; Said, A; Jaouni, F; Qadamani, W "Android-based universal vehicle diagnostic and tracking system" IEEE 16th IEEE Symposium on Consumer Electronics (ISCE), June 2012, Harrisburg, PA, USA, pp. 137-143.
- [C14.] **Tahat, A**; Sacca, A; Kheetan, Y "Design of an Integrated Mobile System to Measure Blood Pressure," IEEE 18th Symposium on Communications and Vehicular Technology (SCVT), Belgium, November 2011.
- [C15.] **Tahat, A**; Alqudah, Y "Analysis of Propagation Models at 2.1 GHz for Simulation of a Live 3G Network," Wireless Advanced (WiAd2011), June 2011, London, UK.
- [C16.] **Tahat, A**; Khalaf, M; Elmuhesen, O "A Solar Energy Water Heater Remote Monitoring and Control System," (IEEE) International Conference on Electronic Devices, Systems, and Applications (ICEDSA), Kuala Lumpur, Malaysia, April 2011.
- [C17.] Alqudah, Y; and **Tahat, A** "Path Loss and Propagation Models at 3.5 GHz Using Deployed WiMAX Network", International Conference on Information Networking, Malaysia, January 2011.
- [C18.] A. Tahat, "A Matrix Scheme to Extrapolation and Interpolation for a 4G MIMO OFDM System," IEEE 72nd Vehicular Technology Conference (IEEE VTC2010-Fall), September 2010, Ottawa, Canada.
- [C19.] A. Tahat, and N. Galatsanos,"Relevance Vector Machines for DMT Based Systems," (IEEE) 20th International Conference on Electronics, Communications, and Computers (CONIELECOMP), Mexico, February 2010.
- [C20.] A. Tahat, "A Wireless Ranging System for the Blind Long-Cane using a Smart-Phone Based," (IEEE) 10th International Conference on Telecommunications (ConTEL), Zagreb, Croatia, June 2009.





- [c21.] A. Tahat, "Body Temperature and Electrocardiogram Monitoring System using SMS," (IEEE) 4th International Symposium on Pervasive Computing (ISWPC), Melbourne, Australia, February 2009.
- [C22.] A. Tahat, "Implementation of an SMS-based Telemedicine system for patient Electrocardiogram Monitoring," 4th IASTED International Conference on TeleHealth and Assistive Technologies, Baltimore, Maryland, USA, April 2008.
- [C23.] A. Tahat, "Mobile Personal Electrocardiogram Monitoring System and Transmission using MMS," (IEEE) 7th International Caribbean Conference on Devices, Circuits, and System, Cancun, Mexico, April 2008.
- [C24.] A. Tahat, "Multi-User Channel Estimation in a 4G OFDM System," IEEE 18th International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC), Athens, Greece, September 2007.
- [c25.] Zoubi, A; **Tahat, A**; and Hasan, O "Mobile Virtual Experimentation Utilizing SMS," 4th IASTED International Conference on Communications, Internet, and Information Technology, Cambridge, Massachusetts, USA, October 2005.
- [C26.] A. Tahat, and D. Ucci, "A CID Approach to Multi-User Channel Estimation for OFDM in SDMA," IASTED International Conference on Wireless and Optical Networks, Banff, Alberta, Canada, July 2002.
- [C27.] A. Tahat, and D. Ucci, "An Extrapolated Matched Filter approach to Multi-User Channel Estimation in OFDM," IEEE Antennas and Propagation Symposium, San Antonio, Texas, USA, June 2002.
- [C28.] A. Tahat, and D. Ucci, "An Iterative Low Complexity Multi-User Channel Estimation for SDMA," The World Wireless Congress, San Francisco, California, USA, May 2002.