

Alessio Zappone

TENURED ASSISTANT PROFESSOR, UNIVERSITY OF CASSINO AND SOUTHERN LAZIO

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Education

- **September 2005:** Bachelor's degree with honors in Telecommunications Engineering, University of Cassino and Southern Lazio, Cassino, Italy.
- **Ottobre 2007:** Master's Degree with honors in Telecommunications Engineering, University of Cassino and Southern Lazio, Cassino, Italy.
- **Aprile 2011:** Ph.D. degree with honors in Electrical and Information Engineering, University of Cassino and Southern Lazio, Cassino, Italia.

Expertise and Skills

- **Scientific.** Communication Theory, Wireless communications, Optimization theory, Machine Learning.
- **Programming.** Matlab, LaTeX, C/C++, Python.
- **Languages.** Italian (mother tongue), English (fluent), German (basic).

Positions & Professional Experience

- **Since 2019:** Tenured assistant professor at the University of Cassino and Southern Lazio, Italy.
- **2017 - 2019:** Experienced Marie Curie Fellow at CentraleSupélec, France.
- **2016 - 2017:** Post-Doc researcher at the University of Cassino and Southern Lazio, Italy.
- **2012 - 2016:** Research associate at the Technische Universität Dresden, Dresden Germany.
- **2011 - 2012** Post-Doc researcher at “Consorzio Nazionale Interuniversitario per le Telecomunicazioni” (CNIT).
- **2008 - 2010:** Ph.D. student in Electrical and Information Engineering at the University of Cassino and Southern Lazio, Cassino, Italy. Final defense: April 18th, 2011, with the thesis “Distributed Resource Allocation in Wireless Networks: A Game-Theoretic Framework”.

Project Experience

- **2020 - 2024.** Technical Coordinator, H2020-MSCA-ETN-METAWIRELESS (Future Wireless Communications Empowered by Reconfigurable Intelligent Meta-Materials), funded by the European Commission.
- **2021 - 2023.** Co-PI, H2020-MSCA-IF-RaSeCol (Radar Sensing, Communication, and Learning for Next Generation Wireless Network), funded by the European Commission.
- **2021 - 2023.** Co-PI, H2020-MSCA-IF-IUCCF (An intelligent design of user-centric cell-free massive MIMO: A deep learning approach), funded by the European Commission.
- **2019 - 2020.** Co-PI, H2020-MSCA-IF-MAPNET (mathematical modeling and optimization of programmable 5G networks), funded by the European Commission.
- **2019 - 2020.** Co-PI, H2020-MSCA-IF-REDESIGN (distributed, self-adaptable, and scalable wireless fog networks), funded by the European Commission.
- **2018.** Collaborator to the research activities of the project: H2020-ERC PoC-CacheMire, (wireless edge caching platform), funded by the European Commission.

- **2017 - 2019.** Fellow, H2020-MSCA-IF BESMART (scalable and green wireless communications for a sustainable networked society), funded by the European Commission.
- **2012 - 2016.** Principal Investigator of the project: DFG-CEMRIN (competitive resource allocation for Energy efficiency Maximization in Relay-assisted Interference wireless Networks), funded by the German Research Foundation (DFG).
- **2015.** Collaborator to the research activities of the project: H2020-MSCA-ETN 5GWireless, funded by the European Commission.
- **2015.** Collaborator to the research activities of the project: FP7-DIWINE (dense cooperative wireless cloud network), funded by the European Commission.
- **Feb. 2011 - July 2012.** Researcher in the project: FP7-TREND (towards real energy-efficient network design), funded by the European Commission.

Editorial Activity

- **Since 2019.** Senior Area Editor, IEEE Signal Processing Letters.
- **2015 - 2019.** Associate Editor, IEEE Signal Processing Letters.
- **2019 - 2020.** Guest Editor for the IEEE Journal on Selected Areas in Communications, special issue “Wireless Networks Empowered by Reconfigurable Intelligent Surfaces”.
- **2019.** Organizer of the Special Session on *Machine Learning for Wireless Networks of the Next Decade*, at the 2019 IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), Istanbul, Turkey, September 2019.
- **2019.** Organizer of the Special Session on *Machine Learning for Wireless Networks of the Next Decade*, at the Third International Balkan Conference on Communications and Networking (BalkanCom), Skopje, North Macedonia, June 2019.
- **2018.** Organizer of the Special Session on *Deep Learning for Future Wireless Communications*, at the 2018 International Symposium on Wireless Communications Systems (ISWCS), Lisbon, Portugal, August 2018.
- **2018.** Organizer of the Workshop COCOA (competitive and cooperative approaches for 5G networks), at European Wireless 2018, Catania, Italy, May 2018.
- **2017.** Organizer of the Workshop COCOA (competitive and cooperative approaches for 5G networks), at European Wireless 2017, Dresden, Germany, May 2017.
- **2015/2016.** Guest Editor for the IEEE Journal on Selected Areas in Communications special issue “Energy-efficient technologies for 5G Wireless Networks”.
- **Since 2014.** Technical program committee member of: IEEE ISWCS 2014, IEEE ICC 2015, IEEE PIMRC 2015, IEEE GreenComm 2015, IEEE ICC 2016, IEEE ICT 2018, IEEE WCNC 2018.
- **Since 2008.** Regular reviewer for: EURASIP Journal on Wireless Communications and Networking, Elsevier Digital Signal Processing, IEEE Transactions on Signal Processing, IEEE Signal Processing Letters, IEEE Transactions on Communications, IEEE Transactions on Wireless Communications, IEEE Communication Letters, IEEE Transactions on Vehicular Technologies.

Honors & Awards

- **2021:** IEEE Marconi Prize Paper Award in Wireless Communications.
- **2021:** Best Paper Award for the Journal on Wireless Communications and Networking.

- **2018:** Exemplary reviewer of the *IEEE Transactions on Wireless Communications*.
- **2017:** Exemplary reviewer of the *IEEE Transactions on Wireless Communications*.
- **2016:** Exemplary reviewer of the *IEEE Transactions on Communications*.
- **2017:** Recipient of the H2020 Marie-Curie Individual fellowship BESMART (scalable and green wireless communications for a sustainable networked society).
- **July 2016:** Elevated to IEEE Senior Membership.
- **2014:** Recipient of a Newcom# mobility grant for a one-month research sojourn at CentraleSupélec, Paris, France, in the framework of the project Newcom#, funded by the European Commission.
- **2012 - 2016** Awarded funding from the German Research Foundation and selected as principal investigator of the scientific research project CEMRIN (Competitive resource allocation for Energy efficiency Maximization in Relay-assisted Interference wireless Networks).
- **2008:** Recipient of a three-year scholarship for Ph.D. studies from the Italian ministry of Public Instruction.

Publications

Monography

- [M.1] A. Zappone, E. A. Jorswieck, “Energy Efficiency in Wireless Networks via Fractional Programming Theory,” *Now Publishers: Foundations and Trends in Communications and Information Theory*, vol. 11, no. 3-4, pp. 185 - 396, 2015.

Book Chapters

- [B.6] A. Zappone, M. Debbah, “Radio Resource Allocation in Smart Radio Environments”, Chapter in *Machine Learning and Wireless Communications*, IET Publisher, A. Goldsmith, D. Gunduz, H. V. Poor, Y. Eldar Eds., 2021.
- [B.5] A. Zappone, M. Di Renzo, M. Debbah, “Deep Learning for Energy-Efficient Beyond 5G Networks”, Chapter in *Green Communications*, IET Publisher, H. Surawaera, J. Yang, A. Zappone, J. Thompson Eds., 2020.
- [B.4] A. Zappone, P.-H. Lin, E. A. Jorswieck, “Confidential and Energy-Efficient Communications by Physical Layer Security”, Chapter in *Trusted Communications with Physical Layer Security for 5G and Beyond*, IET Publisher, T. Q. Duong, X. Zhou, and H. V. Poor Eds., 2017.
- [B.3] A. Zappone, F. Di Stasio, S. Buzzi, E. A. Jorswieck, “Sequential Fractional Programming for Energy-Efficient Resource Allocation in 5G Networks”, Chapter in *Signal Processing for 5G: Algorithms and Implementations*, Wiley, F-L. Luo and J. (C.) Zahng Eds., 2016.
- [B.2] S. Buzzi, A. Ugolini, A. Zappone, G. Colavolpe, “Candidate Modulation Schemes and Waveforms for 5G networks”, Chapter in *Signal Processing for 5G: Algorithms and Implementations*, Wiley, F-L. Luo and J. (C.) Zahng Eds., 2016.
- [B.1] A. Zappone, E. A. Jorswieck, “Energy-efficient Relay Networks”, Chapter in *Relay Technologies in Future Cooperative Communication Systems*, IET Publisher, I. Krikidis and G. Zheng Eds., 2016.

Journals

- [J.56] Q.-U.-A. Nadeem, A. Zappone, A. Chaaban, “Intelligent Reflecting Surface Enabled Random Rotations Scheme for the MISO Broadcast Channel”, *IEEE Transactions on Wireless Communications*, in press.
- [J.55] S. Buzzi, C. D’Andrea, A. Zappone, M. Fresia, Y-P. Zhang, S. Feng, “RIS configuration, beamformer design, and power control in single-cell and multi-cell wireless networks”, *IEEE Transactions on Cognitive Communications and Networking*, in press
- [J.54] A. Zappone, M. Di Renzo, X. Xi, M. Debbah, “On the optimal number of reflecting elements for reconfigurable intelligent surfaces”, *IEEE Wireless Communications Letters*, vol. 10, no. 3, pp. 464 - 468, March 2021.
- [J.53] A. Zappone, M. Di Renzo, F. Shams, X. Qian, M. Debbah, “Overhead-Aware Design of Reconfigurable Intelligent Surfaces in Smart Radio Environments”, *IEEE Transactions on Wireless Communications*, vol. 20, no. 1, pp. 126 - 141, January 2021.
- [J.52] M. Di Renzo, A. Zappone, M. Debbah, M.-S. Alouini, C. Yuen, J. de Rosny, S. Tretyakov, “Smart Radio Environments Empowered by Reconfigurable Intelligent Surfaces: How It Works, State of Research, and The Road Ahead”, *IEEE Journal on Selected Areas in Communications*, vol. 38, no. 11, pp. 2450 - 2525, November 2020.
- [J.51] J. Song, M. Di Renzo, A. Zappone, V. Sciancalepore, X. Costa-Perez, “System-Level Optimization in Poisson Cellular Networks: An Approach Based on the Generalized Benders Decomposition”, *IEEE Wireless Communication Letters*, *IEEE Wireless Communications Letters*, vol. 9, no. 10, pp. 1773 - 1777, October 2020.

- [J.50] B. Matthiesen, A. Zappone, K.-L. Besser, E. A. Jorswieck, M. Debbah, "A Globally Optimal Energy-Efficient Power Control Framework and Its Efficient Implementation in Wireless Interference Networks", *IEEE Transactions on Signal Processing*, vol. 68, pp. 3887 - 3902, June 2020.
- [J.49] L. You, J. Xiong, A. Zappone, W. Wang, X. Gao, "Spectral Efficiency and Energy Efficiency Tradeoff in Massive MIMO Downlink Transmission With Statistical CSIT", *IEEE Transactions on Signal Processing*, vol. 68, pp. 2645 - 2659, April 2020.
- [J.48] S. Buzzi, C. D'Andrea, A. Zappone, C. D'Elia, "User-Centric 5G Cellular Networks: Resource Allocation and Comparison with the Cell-Free Massive MIMO Approach", *IEEE Transactions on Wireless Communications*, vol. 19, no. 2, pp. 1250 - 1264, February 2020.
- [J.47] M. Sefunç, A. Zappone, E. A. Jorswieck, "Energy Efficiency Optimization in MIMO Systems with Hybrid Beamforming" *IEEE Transactions on Green Communications and Networking*, vol. 4, no. 1, pp. 95 - 108, March 2020.
- [J.46] M. Sharma, A. Zappone, M. Assad, M. Debbah, S. Vassilaras, "Distributed Power Control for Large Energy Harvesting Networks: A Multi-Agent Deep Reinforcement Learning Approach", *IEEE Transactions on Cognitive Communications and Networking*, vol. 5, no. 4, pp. 1140 - 1154, December 2019.
- [J.45] A. Zappone, M. Di Renzo, M. Debbah, "Wireless Networks Design in the Era of Deep Learning: Model-Based, AI-Based, or Both?", *IEEE Transactions on Communications*, vol. 67, no. 10, pp. 7331 - 7376, October 2019.
- [J.44] C. Huang, A. Zappone, G. Alexandropoulos, M. Debbah, Y. Chau, "Reconfigurable Intelligent Surfaces for Energy Efficiency in Wireless Communication", *IEEE Transactions on Wireless Communications*, vol. 18, no. 8, pp. 4157 - 4170, August 2019.
- [J.43] A. Zappone, M. Di Renzo, M. Debbah, T. T. Lam, X. Qian, "Model-Aided Wireless Artificial Intelligence: Embedding Expert Knowledge in Deep Neural Networks Towards Wireless Systems Optimization", *IEEE Vehicular Technology Magazine*, vol. 14, no.3, 2019.
- [J.42] M. Di Renzo, M. Debbah, D.-T. Phan-Huy, A. Zappone, et alii, "Smart Radio Environments Empowered by AI Reconfigurable Meta-Surfaces: An Idea Whose Time Has Come", *EURASIP Journal of Wireless Communications and Networking*, no. 1, 2019.
- [J.41] M. Alonzo, S. Buzzi, A. Zappone, C. D'Elia, "Energy-Efficient Power Control in Cell-Free and User-Centric Massive MIMO at Millimeter Wave", *IEEE Transactions on Green Communications and Networking*, in press, 2019.
- [J.40] A. Zappone, P.-H. Lin, E. A. Jorswieck, "Secrecy Energy Efficiency for MIMO Single-and Multi-Cell Downlink Transmission with Confidential Messages", *IEEE Transactions on Information Forensics and Security*, vol. 14, no.8, pp. 2059 - 2073, August 2019.
- [J.39] M. Di Renzo, A. Zappone, T. T. Lam, M. Debbah, "Spectral-Energy Efficiency Pareto Front in Cellular Networks: A Stochastic Geometry Framework", *IEEE Wireless Communications Letters*, vol. 8, no. 2, pp. 424 - 427, April 2019.
- [J.38] M. Di Renzo, T. T. Lam, A. Zappone, M. Debbah, "A Tractable Closed-Form Expression of the Coverage Probability in Poisson Cellular Networks", *IEEE Wireless Communications Letters*, vol. 8, no. 1, pp. 249 - 252, February 2019.
- [J.37] A. Pizzo, A. Zappone, L. Sanguinetti, "Solving Fractional Polynomial Programs by Polynomial Optimization Theory", *IEEE Signal Processing Letters*, vol. 25, no. 10, pp. 1540 - 1544, October 2018.
- [J.36] A. Zappone, S. Atapattu, M. Di Renzo, J. Evans, M. Debbah, "Energy-Efficient Relay Assignment and Power Control in Multi-User and Multi-Relay Networks", *IEEE Wireless Communications Letters*, vol. 7, no. 6, pp. 1070 - 1073, December 2018.

- [J.35] A. Aubry, A. De Maio, A. Zappone, M. Razaviyayn, Z.-Q. Luo "A New Sequential Optimization Procedure and its Application to Resource Allocation for Wireless Systems", *IEEE Transactions on Signal Processing*, vol. 66, no. 24, pp. 6518 - 6533, December 2018.
- [J.34] E. Grossi, M. Lops, L. Venturino, A. Zappone, "Opportunistic radar in IEEE 802.11ad networks," *IEEE Transactions on Signal Processing*, vol. 66, no. 9, pp. 2441 - 2454, May 2018.
- [J.33] S. D'Oro, A. Zappone, S. Palazzo, M. Lops, "A learning approach for low-complexity optimization of energy efficiency in multicarrier wireless networks", *IEEE Transactions on Wireless Communications*, vol. 17, no. 5, pp. 3226 - 3241, May 2018.
- [J.32] M. Di Renzo, A. Zappone, T. T. Lam, M. Debbah, "System-Level Modeling and Optimization of the Energy Efficiency in Cellular Networks - A Stochastic Geometry Framework", *IEEE Transactions on Wireless Communications*, vol. 17, no. 4, pp. 2539-2556, April 2018.
- [J.31] M. Sinaie, P.-H. Lin, A. Zappone, P. Azmi, E. A. Jorswieck "Delay-Aware Resource Allocation For 5G Wireless Networks With Wireless Power Transfer", *IEEE Transactions on Vehicular Technology*, vol. 67, no. 7, pp. 5841 - 5855, July 2018.
- [J.30] A. Zappone, L. Sanguinetti, M. Debbah, "Energy-Delay Efficient Power Control in Wireless Networks", *IEEE Transactions on Communications*, vol. 66, no.1, pp. 418 - 431, January 2018.
- [J.29] A. Zappone, P. H. Lin, E. A. Jorswieck, "Optimal Energy-Efficient Design of Confidential Multiple-Antenna Systems", *IEEE Transactions on Information Forensics and Security*, vol. 13, no. 1, pp. 237 - 252, January 2018.
- [J.28] C.-C. Cheng, M. Di Renzo, F. Graziosi, A. Zappone "On Simultaneous Wireless Information and Power Transfer for Receive Spatial Modulation", *IEEE Access*, vol. 5, pp. 23204 - 23211, November, 2017.
- [J.27] O. Aydin, E. A. Jorswieck, D. Aziz, A. Zappone, "Energy-Spectral Efficiency Tradeoffs in 5G Multi-Operator Networks With Heterogeneous Constraints", *IEEE Transactions on Wireless Communications*, vol. 16, no.9, pp. 5869 - 5881, September 2017.
- [J.26] M. Yemini, A. Zappone, E.A. Jorswieck, A. Leshem, "Energy Efficient Bidirectional Massive MIMO Relay Beamforming", *IEEE Signal Processing Letters*, vol. 24, no. 7, pp. 1010 - 1014, July 2017.
- [J.25] A. Zappone, E. Björnson, L. Sanguinetti, E. A. Jorswieck, "Globally Optimal Energy-Efficient Power Control and Receiver Design in Wireless Networks", *IEEE Transactions on Signal Processing*, vol. 65, no. 11, pp. 2844 - 2859, June 2017.
- [J.24] A. Zappone, B. Matthiesen, E. A. Jorswieck, "Energy Efficiency in MIMO Underlay and Overlay Device-to-Device Communications and Cognitive Radio Systems", *IEEE Transactions on Signal Processing*, vol. 65, no. 4, pp. 1026 - 1041, February 2017.
- [J.23] A. Zappone, E. A. Jorswieck, "Energy-efficient resource allocation in future wireless networks by sequential fractional programming", *Digital Signal Processing*, vol 60, pp. 324 - 337, January 2017.
- [J.22] A. Zappone, E. A. Jorswieck, A. Leshem, "Distributed Resource Allocation for Energy Efficiency in MIMO OFDMA Wireless Networks", *IEEE Journal on Selected Areas in Communications*, vol. 34, no. 12, pp. 3451 - 3465, December 2016.
- [J.21] A. Zappone, P. H. Lin, E. A. Jorswieck, "Energy Efficiency of Confidential Multi-Antenna Systems With Artificial Noise and Statistical CSI", *IEEE Journal on Selected Topics in Signal Processing*, vol. 10, no. 8, pp. 1462 - 1477, December 2016.
- [J.20] A. Zappone, L. Sanguinetti, G. Bacci, E. A. Jorswieck, M. Debbah, "Energy-Efficient Power Control: A Look at 5G Wireless Technologies", *IEEE Transactions on Signal Processing*, vol. 64, no. 7, pp. 1668 - 1683, April 2016.

- [J.19] S. Buzzi, C.-L. I, T. E. Klein, H. V. Poor, C. Yang, and A. Zappone, "A Survey of Energy-Efficient Techniques for 5G Networks and Challenges Ahead", *IEEE Journal on Selected Areas in Communications*, vol. 34, no. 4, pp. 697 - 709, April 2016.
- [J.18] M. Sinaie, A. Zappone, E. A. Jorswieck, P. Azmi, "A Novel Power Consumption Model for Effective Energy Efficiency in Wireless Networks", *IEEE Wireless Communications Letters*, vol. 5, no. 2, pp. 152 - 155, April 2016.
- [J.17] P. Cao, A. Zappone, E. A. Jorswieck, "Grouping-Based Interference Alignment With IA-Cell Assignment in Multi-Cell MIMO MAC Under Limited Feedback", *IEEE Transactions on Signal Processing*, vol. 64, no. 5, pp. 1336 - 1351, March 2016.
- [J.16] F. Gabry, A. Zappone, R. Thobaben, E. A. Jorswieck, M. Skoglund, "Energy Efficiency Analysis of Cooperative Jamming in Cognitive Radio Networks with Secrecy Constraints", *IEEE Wireless Communications Letters*, vol. 4, no. 4, pp. 437 - 440, August 2015.
- [J.15] B. Matthiesen, A. Zappone, E. A. Jorswieck, "Resource Allocation for Energy-Efficient 3-Way Relay Channels", *IEEE Transactions on Wireless Communications*, vol. 14, no. 8, pp. 4454 - 4468, August 2015.
- [J.14] L. Venturino, A. Zappone, C. Risi, and S. Buzzi, "Energy-Efficient Scheduling and Power Allocation in Downlink OFDMA Networks with Base Station Coordination", *IEEE Transactions on Wireless Communications*, vol. 14, no. 1, pp. 1 - 14, January 2015.
- [J.13] A. Zappone, E. A. Jorswieck, and S. Buzzi, "Energy Efficiency and Interference Neutralization in Two-Hop MIMO Interference Channels", *IEEE Transactions on Signal Processing*, vol. 62, no. 24, pp. 6481 - 6495, December 2014.
- [J.12] A. Zappone, P. Cao, and E. A. Jorswieck, "Low-Complexity Energy Efficiency Optimization with Statistical CSI in Two-Hop MIMO Systems", *IEEE Signal Processing Letters*, vol. 21, no. 11, pp. 1398 - 1402, November 2014.
- [J.11] A. Zappone and E. A. Jorswieck, "Resource allocation in relay-assisted MIMO MAC systems with statistical CSI", *Physical Communications*, vol. 12, pp. 93 - 104, Settembre 2014.
- [J.10] A. Zappone, P. Cao, and E. A. Jorswieck, "Energy Efficiency Optimization in Relay-Assisted MIMO Systems With Perfect and Statistical CSI", *IEEE Transactions on Signal Processing*, vol. 62, no. 2, pp. 443 - 457, January 2014.
- [J.9] A. Zappone, G. Alfano, S. Buzzi, and M. Meo, "Distributed energy-aware resource allocation in multi-antenna multi-carrier interference networks with statistical CSI", *EURASIP Journal on Wireless Communications and Networking*, DOI: <https://doi.org/10.1186/1687-1499-2013-205>, August 2013.
- [J.8] S. Buzzi and A. Zappone "Potential games for energy-efficient resource allocation in multipoint-to-multipoint CDMA wireless data networks", *Physical Communications*, vol. 7, pp. 1 - 13, June 2013.
- [J.7] A. Zappone, Z. Chong, E. A. Jorswieck, and S. Buzzi, "Energy-Aware Competitive Power Control in Relay-Assisted Interference Wireless Networks", *IEEE Transactions on Wireless Communications*, vol. 12, no. 4, pp. 1860 - 1871, April 2013.
- [J.6] A. Zappone and E. A. Jorswieck, "Resource Allocation in Amplify-and-Forward Relay-Assisted DS/CDMA Systems", *IEEE Transactions on Wireless Communications*, vol. 11, no. 4, pp. 1271 - 1276, April 2012.
- [J.5] S. Buzzi, G. Colavolpe, D. Saturnino, and A. Zappone, "Potential Games for Energy-Efficient Power Control and Subcarrier Allocation in Uplink Multicell OFDMA Systems", *IEEE Journal on Selected Topics in Signal Processing*, vol. 6, no. 2, pp. 89 - 103, April 2012.
- [J.4] A. Zappone, S. Buzzi, and E. A. Jorswieck, "Energy-Efficient Power Control and Receiver Design in Relay-Assisted DS/CDMA Wireless Networks via Game Theory", *IEEE Communication Letters*, vol. 15, no. 7, pp.

701 - 703, July 2011.

- [J.3] S. Buzzi, H. V. Poor, and A. Zappone, "Transmitter Waveform and Widely Linear Receiver Design: Noncooperative Games for Wireless Multiple-Access Networks", *IEEE Transactions on Information Theory*, vol. 56, no. 10, pp. 4874 - 4892, October 2010.
- [J.2] S. Buzzi, L. Venturino, A. Zappone, "Multipath delay acquisition in asynchronous doubly-selective DS/CDMA fading channels", *IEEE Communication Letters*, vol. 14, no. 4, pp. 276 - 278, April 2010.
- [J.1] S. Buzzi, L. Venturino, A. Zappone, and A. De Maio, "Blind user detection in doubly-dispersive DS/CDMA fading channels", *IEEE Transactions on Signal Processing*, vol. 58, no. 3, pp. 1446 - 1451, March 2010.

Conference papers

- [C.59] B. Matthiesen, A. Zappone, E. A. Jorswieck, M. Debbah, "Deep Learning for Real-Time Energy-Efficient Power Control in Mobile Networks", *20th IEEE International Workshop on Signal Processing Advances in Wireless Communications*, SPAWC 2019, Cannes, France, July 2019.
- [C.58] M. K. Sharma, A. Zappone, M. Debbah, and M. Assaad, "Multi-agent Deep Reinforcement Learning based Power Control for Large Energy Harvesting Networks", *17th International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks*, WiOpt 2019, Avignon, France, June 2019.
- [C.57] M. K. Sharma, A. Zappone, M. Debbah, M. Assaad, "Deep Learning Based Online Power Control for Large Energy Harvesting Networks", *44th IEEE International Conference on Acoustics, Speech and Signal Processing*, ICASSP 2019, Brighton, UK, May 2019.
- [C.56] C. Huang, G. Alexandropoulos, A. Zappone, C. Yuen, M. Debbah, "Deep Learning for UL/DL Channel Calibration in Generic Massive MIMO Systems", *2019 IEEE International Conference on Communications*, ICC 2019, Shanghai, China, June 2019.
- [C.55] M. Alonzo, S. Buzzi, A. Zappone, "Energy-Efficient Downlink Power Control in mmWave Cell-Free and User-Centric Massive MIMO", *IEEE 5G World Forum*, Santa Clara, CA, USA, July, 2018.
- [C.54] A. Zappone, M. Debbah, Z. Altman, "Online Energy-Efficient Power Control in Wireless Networks by Deep Neural Networks", *19th IEEE International Workshop on Signal Processing Advances in Wireless Communications*, SPAWC 2018, Kalamata, Grecia, Giugno 2018.
- [C.53] M. Di Renzo, A. Zappone, T. T. Lam, M. Debbah, "Stochastic Geometry Modeling of Cellular Networks: A New Definition of Coverage and Its Application to Energy Efficiency Optimization", *26th European Signal Processing Conference*, EUSIPCO 2018, Rome, Italy, September 2018.
- [C.52] C. Huang, G. Alexandropoulos, A. Zappone, M. Debbah, C. Yuen, "Energy Efficient Multi-User MISO Communication using Low Resolution Large Intelligent Surfaces", *IEEE Global Communication Conference*, GLOBECOM 2018, Workshop on Green and Sustainable 5G Wireless Networks, Abu Dhabi, United Arab Emirates, December 2018.
- [C.51] C. Huang, A. Zappone, M. Debbah, C. Yuen, "Achievable Rate Maximization by Passive Intelligent Mirrors", *43rd IEEE International Conference on Acoustics, Speech and Signal Processing*, ICASSP 2018, Calgary, Alberta, Canada, April 2018.
- [C.50] M. Yüzgeçioğlu, A. Zappone, E. A. Jorswieck, "Energy Efficiency in Hybrid Beamforming Large-scale mmWave Multiuser MIMO with Spatial Modulation", *2018 IEEE Wireless Communications and Networking Conference*, WCNC 2018, Barcelona, Spain, April 2018.
- [C.49] S. D'Oro, A. Zappone, S. Palazzo, M. Lops "A Learning-Based Approach to Energy Efficiency Maximization in Wireless Networks", *2018 IEEE Wireless Communications and Networking Conference*, WCNC 2018, Barcelona, Spain, April 2018.

- [C.48] H.-G. Engler, A. Zappone, E. A. Jorswieck, "EE Maximization for Massive MIMO with Fully Connected Hybrid Beamformers", *17th IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing*, CAMSAP 2017, Curacao, Dutch Antilles, December 2017.
- [C.47] M. Sinaie, P.-H. Lin, A. Zappone, P. Azmi, E. A. Jorswieck, "Resource Allocation in OFDM-based SWIPT with statistical delay constraints", *2017 IEEE Global Communication Conference*, GLOBECOM 2017, Singapore, December 2017.
- [C.46] S. Buzzi, A. Zappone, "Downlink Power Control in User-Centric and Cell-Free Massive MIMO Wireless Networks", *IEEE 28th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications*, PIMRC 2017, Montreal, Canada, October 2017.
- [C.45] E. Grossi, M. Lops, L. Venturino, A. Zappone, "Opportunistic Radar in IEEE 802.11ad Vehicular Networks", *IEEE 85th Vehicular Technology Conference VTC2017-Spring*, Sydney, Australia, June 2017.
- [C.44] E. Grossi, M. Lops, L. Venturino, A. Zappone, "Opportunistic Automotive Radar Using the IEEE 802.11ad Standard", *2017 IEEE Radar Conference*, Seattle, USA, May 2017.
- [C.43] C. Sun, A. Zappone, E. A. Jorswieck, "Energy-efficient Design for Non-Regenerative MIMO Relay Networks", *42st IEEE International Conference on Acoustics, Speech and Signal Processing*, ICASSP 2017, New Orleans, USA, March 2017.
- [C.42] A. Kumar, A. Zappone, E. A. Jorswieck, T. Alpcan, "An Energy-efficiency Game in Relay-assisted D2D Networks with Malicious Devices", *International Conference on Network Games, Control and Optimization*, NETGCOOP 2016, Avignone, France, November 2016.
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