PERSONAL INFORMATION

Michele Polese

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https://scholar.google.com/citations?user=JmMEy-QAAAAJ

www.github.com/mychele

www.linkedin.com/in/michelepolese

Date of birth 02/22/1992 | Nationality Italian (Country of birth: Italy)

WORK EXPERIENCE

10/2023–current
Assistant Research Professor
Institute for the Wireless Internet of Things, Northeastern University, Boston, MA

Next generation software-defined programmable spectrum systems, wireless experimental platform (including Colosseum), Open6G OTIC

09/2020–current
Part-Time Instructor
Northeastern University, Boston, MA

EECE 5698 St: Network Programming

01/2021–09/2023
Principal Research Scientist
Institute for the Wireless Internet of Things, Northeastern University, Boston, MA

Next generation software-defined programmable spectrum systems

03/2020–01/2021
Associate Research Scientist
Institute for the Wireless Internet of Things, Northeastern University, Boston, MA

Next generation software-defined wireless networks at terahertz and mmWave frequencies

10/2019–09/2020
Adjunct Professor
University of Padova, Italy

Programming for Telecommunications

Master's degree ICT Internet Multimedia Engineering

10/2019–03/2020
Postdoctoral Researcher
University of Padova, Italy

Channel modeling and end-to-end design of 5G and 6G networks

03/2019–07/2019
Visiting Scholar
Northeastern University, Boston, MA

Supervisor: Prof. Tommaso Melodia

Experimental research on end-to-end mmWave networks

05/2017–04/2019
No-cost collaborator
AT&T Labs, Bedminster, NJ

Supervisor: Rittwik Jana

Machine learning in cellular networks, transport layer issues at mmWaves

2017–2019 **Contractor**

Consorzio Futuro in Ricerca, Ferrara, Italy

Multiple projects with InterDigital on beam management and Integrated Access and Backhaul for 3GPP NR

04/2018–06/2018 **Visitor**

AT&T Labs, Bedminster, NJ

Supervisor: Rittwik Jana

Machine learning in cellular networks

04/2017 **Visiting Academic**

NYU Wireless, New York University, Brooklyn, NY

Supervisor: Prof. Sundeep Rangan

End-to-end performance evaluation of mmWave networks

09/2013–05/2015 **Collaborator**

Liverobotics, Oderzo, Italy

Implementation of a video streaming platform for connected drones, project selected for the European Maker Faire in Rome (October 2014)

EDUCATION AND TRAINING

10/2016–02/2020 **Ph.D. in Information Engineering**

University of Padova, Italy

Supervisor: Prof. Michele Zorzi

Thesis title: End-to-end design and evaluation of mmWave cellular networks

10/2014–07/2016 **M. Sc. in Telecommunications Engineering**

University of Padova, Italy

Final grade: 110/110 summa cum laude

GPA: 30/30

10/2011–07/2014 **B. Sc. in Information Engineering**

University of Padova, Italy

Final grade: 110/110 summa cum laude

GPA: 29.86/30

PROFESSIONAL ACTIVITIES

Committee Service

AMS Committee on Radio Frequency Allocations, Member, 2022-2024

IEEE ComSoc Young Professionals, Member at Large, 2019-2021, 2022-2024

Conference Chairing

TPC co-chair, IEEE/IFIP WONS 2024

Finance co-chair, IEEE WoWMoM 2023

TPC co-chair, ACM WiNTECH 2023

Co-chair, IEEE Globecom Workshops (GC Wkshps): Workshop on Next-Generation Radio Access Networks: Architectures, Interfaces, and Implementations, 2022

TPC co-chair, Workshop on ns-3 (WNS3) - 2021-2022

Organizer, Open 5G Forum (sponsored by an ACM SigMobile grant) - 2021-2022

TPC Member

IEEE Globecom WC symposium 2023

IEEE HPSR 2023

IEEE LANMAN 2023

IEEE PIMRC 2023

IEEE/IFIP WONS 2022-2023

IEEE WoWMoM 2023

Workshop on ns-3 (WNS3) - 2019, 2020, 2023

IEEE Consumer Communications and Networking Conference (CCNC), 2021-2023

IEEE MASS, 2021-2022

ACM MobiArch, 2021-2022

IEEE 1st Workshop on ICT for Integrated Smart Mobility Solutions, 2021

IEEE ICC Backhaul Fronthaul Networks SAC 2022

Editor

Editor, Elsevier Computer Networks, 2023-current

Associate Technical Editor, IEEE Communications Magazine, 2021-current

Guest Editor, IEEE Journal on Selected Areas in Communications (JSAC), Special Issue on Open RAN, 2022-current

Guest Editor, IEEE Communications Magazine Feature Topic on Transport Layer Innovations for Future Networks, 2021

Guest Associate Editor, Frontiers in Communications and Networks

Reviewer

Reviewer for the French National Research Agency (ANR), Chistera Call, 2021

Peer reviews in multiple IEEE, ACM and Elsevier Journals and Conferences:

- IEEE Journal on Selected Areas in Communications
- IEEE Communications Surveys & Tutorials
- IEEE Communications Magazine
- IEEE Communications Letters
- IEEE Access
- IEEE Network
- IEEE Transactions on Communications
- IEEE Transactions on Mobile Computing
- IEEE Transactions on Multimedia
- IEEE Transactions on Vehicular Technology
- IEEE Transactions on Wireless Communications
- IEEE Vehicular Technology Magazine
- Elsevier Computer Communications
- Elsevier Computer Networks
- European Wireless
- IEEE 5G-WF
- IEEE Globecom
- IEEE ICC
- IEEE ICNC
- IEEE LCN
- IEEE VTC
- IEEE WCNC

Conference Tutorials

IEEE CCNC 2021: Tutorial #9: Toward 5G mmWave Cellular Networks: Potential, Challenges, and Enablers

IEEE NetSoft 2022: Tutorial #4: Understanding O-RAN: A Tutorial on Architecture, Interfaces, Algorithms, Security, and Research

IEEE GLOBECOM 2022: TU-11: Understanding O-RAN: A Tutorial on Architecture, Interfaces, Algorithms, Security, and Research

ACM MobiCom 2023: Understanding O-RAN: A Tutorial on Architecture, Interfaces, Algorithms, Security, and Research

Thesis Committees

Committee Member for Jacob Hall, Master Thesis, Northeastern University, 2022

Co-supervised multiple M.Sc. thesis at the University of Padova, 2018-2022

Professional Memberships

IEEE Member (S'17, M'20), ACM SigMobile member, American Meteorological Society (AMS) member

Other Activities

Mentor for the ns-3 project in the Google Code-in 2018, 2019, 2022 (introducing pre-university students to open source development) and Google Summer of Code 2022

Member of Northeastern Future Faculty Program, 2020-2022

GRANTS

Collaborative Research: SWIFT-SAT: DASS: Dynamically Adjustable Spectrum Sharing between Ground Communication Networks and Earth Exploration Satellite Systems Above 100 GHz, *Funding agency:* NSF CNS-2332721, $425k, co-PI, 2024-current.

TENORAN - Automated and fine-grained energy-efficiency profiling of Open RAN systems via high-fidelity standardized testing scenarios, *Funding agency:* NTIA Public Wireless Supply Chain Innovation Fund (NOFO 2023), $2M, co-PI, 2023-current. Press: `https://tinyurl.com/ntia-pr-tenoran`, `https://tinyurl.com/ntia-ngn-tenoran`, `https://tinyurl.com/ntia-boston-globe`.

NSF-AoF: CISE Core: Small: Enabling Mobile Terahertz Communication for 6G Cellular Networks, *Funding agency:* NSF CNS-2225590, $456k, co-PI, 2022-current.

Open 6G: O-RAN compliant open source protocol stacks for softwarized dynamic networking at the edge, *Funding agency:* Department of Defense IB5G program, $2.37M, co-PI, 2022-current. Press: `https://tinyurl.com/5n8r8tzx`, `https://tinyurl.com/3d7ub885`.

MRI: Development of X-Mili: An Open, Programmable Platform to Conquer the 5G and 6G Wireless Spectrum, *Funding agency:* NSF CNS-2117814, $2M, senior personnel, 2022-current. Press: `https://tinyurl.com/mt5jdc8a`.

AWARDS

2022 ISSNAF Young Investigator Award for Computer Science

Finalist for the GTTI Award 2020 for the best Ph.D. thesis in the telecommunications area in Italy

Best Paper Award at the Workshop on ns-3 (WNS3) 2020 for the paper [65]

Mario Gerla Best Paper Award, IEEE MedComNet 2020, for the paper [67]

Best Journal Paper Award of the IEEE ComSoc Technical Committee on Communications Systems Integration and Modeling (CSIM) 2019 for the paper [5]

Best Paper Award at the Workshop on ns-3 (WNS3) 2019 for the paper [57]

IEEE ComSoc EMEA Outstanding Young Researcher Award, 2019

Lead of the team that won the second prize at the 1st IEEE Joint VTS/ComSoc Italian SDR Hackathon, 2019

Honourable Mention at the HIT-DIGITALmeet Young Researchers Award, Padova, October 2018

PRESS

Everything you need to know about the 5G revolution—and how it will usher in 6G, Northeastern Global News, August 9, 2023. https://news.northeastern.edu/2023/08/09/5g-to-6g-transformation/

Climate Monitoring and 6G Must Learn to Coexist, IEEE Spectrum, July 25, 2023 (interview). https://spectrum.ieee.org/climate-monitoring-satellites

The Future of 6G Wireless Could Be Closer Than You Think, News Northeastern, May 26, 2022. http://news.northeastern.edu/2022/05/26/6g-wireless-future/

Northeastern University demos AI-based O-RAN at MWC LA, LightReading, October 26, 2021. https://www.lightreading.com/open-ran/northeastern-university-demos-ai-based-o-ran-at-mwc-la/d/d-id/773046

ns-O-RAN https://tinyurl.com/jbrb88jx and https://tinyurl.com/24th47ja

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

Computer skills

- advanced knowledge of discrete events simulators (ns-3, OMNeT++)
- contributor to the ns-3 open source project (coded in C++)
- programming and scripting with different languages (C, C++, java, python, javascript, MATLAB, perl, bash, Labview)
- Apache Spark and Hadoop
- Git, svn, mercurial
- LaTeX
- Software-defined radios

Communication and managerial skills

- divulgation: I have delivered several invited presentations and an online webinar for IEEE to present the results of my research.
- supervision: I have co-supervised four thesis for the M.Sc. in Telecommunications Engineering at the University of Padova (all full marks). As teaching assistant, I supervised different groups of students whose final project results were published in international peer-reviewed conferences and journals.
- team work: I worked in research teams with people from different cultural backgrounds, both on site and remotely, also with organizational roles in the teams.

Other

- I hold the Abilitazione Scientifica Nazionale (Italian national scientific habilitation) for Associate Professor in the Telecommunications area (09/F2) (valid from June 11, 2021).

PATENTS

[1] T. Melodia, S. D'Oro, M. Polese, and L. Bonati, "Intelligence and Learning in O-RAN for 5G and 6G Cellular Networks," May 26 2022, US Patent App. 17/456,361.

[2] M. Polese, F. Restuccia, and T. Melodia, "Coordination-free mmwave beam management with deep waveform learning," Feb. 21 2023, uS Patent 11,588,539.

PUBLICATIONS

Journals

[3] M. Polese, M. Giordani, M. Mezzavilla, S. Rangan, and M. Zorzi, "Improved Handover Through Dual Connectivity in 5G mmWave Mobile Networks," *IEEE Journal on Selected Areas in Communications*, vol. 35, no. 9, pp. 2069–2084, September 2017.

[4] M. Polese, R. Jana, and M. Zorzi, "TCP and MP-TCP in 5G mmWave Networks," *IEEE Internet Computing*, vol. 21, no. 5, pp. 12–19, September 2017.

[5] M. Mezzavilla, M. Zhang, M. Polese, R. Ford, S. Dutta, S. Rangan, and M. Zorzi, "End-to-End Simulation of 5G mmWave Networks," *IEEE Communications Surveys & Tutorials*, vol. 20, no. 3, pp. 2237–2263, Third quarter 2018.

[6] M. Mezzavilla, M. Polese, A. Zanella, A. Dhananjay, S. Rangan, C. Kessler, T. S. Rappaport, and M. Zorzi, "Public Safety Communications above 6 GHz: Challenges and Opportunities," *IEEE Access*, vol. 6, pp. 316–329, 2018.

[7] M. Dalla Cia, F. Mason, D. Peron, F. Chiariotti, M. Polese, T. Mahmoodi, M. Zorzi, and A. Zanella, "Using Smart City Data in 5G Self-Organizing Networks," *IEEE Internet of Things Journal*, vol. 5, no. 2, pp. 645–654, April 2018.

[8] M. Zhang, M. Polese, M. Mezzavilla, J. Zhu, S. Rangan, S. Panwar, and a. M. Zorzi, "Will TCP Work in mmWave 5G Cellular Networks?" *IEEE Communications Magazine*, vol. 57, no. 1, pp. 65–71, January 2019.

[9] M. Giordani, M. Polese, A. Roy, D. Castor, and M. Zorzi, "Standalone and Non-Standalone Beam Management for 3GPP NR at mmWaves," *IEEE Communications Magazine*, vol. 57, no. 4, pp. 123–129, April 2019.

[10] ——, "A Tutorial on Beam Management for 3GPP NR at mmWave Frequencies," *IEEE Communications Surveys & Tutorials*, vol. 21, no. 1, pp. 173–196, First quarter 2019.

[11] M. Polese, F. Chiariotti, E. Bonetto, F. Rigotto, A. Zanella, and M. Zorzi, "A survey on recent advances in transport layer protocols," *IEEE Communications Surveys and Tutorials*, vol. 21, no. 4, pp. 3584–3608, Fourth quarter 2019.

[12] F. Meneghello, M. Calore, D. Zucchetto, M. Polese, and A. Zanella, "IoT: Internet of Threats? A survey of practical security vulnerabilities in real IoT devices," *IEEE Internet of Things Journal*, pp. 1–1, 2019.

[13] M. Polese, R. Jana, V. Kounev, K. Zhang, S. Deb, and M. Zorzi, "Machine Learning at the Edge: A Data-Driven Architecture with Applications to 5G Cellular Networks," *IEEE Transactions on Mobile Computing*, pp. 1–1, 2020.

[14] M. Polese, M. Giordani, T. Zugno, A. Roy, S. Goyal, D. Castor, and M. Zorzi, "Integrated access and backhaul in 5g mmwave networks: Potential and challenges," *IEEE Communications Magazine*, vol. 58, no. 3, pp. 62–68, March 2020.

[15] M. Giordani, M. Polese, M. Mezzavilla, S. Rangan, and M. Zorzi, "Toward 6g networks: Use cases and technologies," *IEEE Communications Magazine*, vol. 58, no. 3, pp. 55–61, March 2020.

[16] T. Zugno, M. Drago, M. Giordani, M. Polese, and M. Zorzi, "Toward standardization of millimeter-wave vehicle-to-vehicle networks: Open challenges and performance evaluation," *IEEE Communications Magazine*, vol. 58, no. 9, pp. 79–85, Sep. 2020.

[17] L. Bonati, M. Polese, S. D'Oro, S. Basagni, and T. Melodia, "Open, programmable, and virtualized 5G networks: State-of-the-art and the road ahead," *Computer Networks (COMNET)*, vol. 182, August 2020.

[18] M. Polese, J. M. Jornet, T. Melodia, and M. Zorzi, "Toward End-to-End, Full-Stack 6G Terahertz Networks," *IEEE Communications Magazine*, vol. 58, no. 11, pp. 48–54, November 2020.

[19] M. Lecci, P. Testolina, M. Polese, M. Giordani, and M. Zorzi, "Accuracy vs. Complexity for mmWave Ray-Tracing: A Full Stack Perspective," *IEEE Transactions on Wireless Communications*, pp. 1–1, 2021.

[20] M. Pagin, T. Zugno, M. Polese, and M. Zorzi, "Resource Management for 5G NR Integrated Access and Backhaul: a Semi-centralized Approach," *IEEE Transactions on Wireless Communications*, pp. 1–1, 2021.

[21] F. Gomez-Cuba, T. Zugno, J. Kim, M. Polese, S. Bahk, and M. Zorzi, "Hybrid Beamforming in 5G mmWave Networks: a Full-stack Perspective," *IEEE Transactions on Wireless Communications*, pp. 1–1, 2021.

[22] L. Bonati, S. D'Oro, M. Polese, S. Basagni, and T. Melodia, "Intelligence and Learning in O-RAN for Data-driven NextG Cellular Networks," *IEEE Communications Magazine*, 2021.

[23] M. Polese, P. Teymoori, and J. Zhu, "Guest editorial: Transport layer innovations for future networks," *IEEE Communications Magazine*, vol. 59, no. 4, pp. 14–15, April 2021.

[24] M. Polese, L. Bonati, S. D'Oro, S. Basagni, and T. Melodia, "ColO-RAN: Developing Machine Learning-based xApps for Open RAN Closed-loop Control on Programmable Experimental Platforms," *IEEE Transactions on Mobile Computing*, pp. 1–14, July 2022.

[25] S. D'Oro, M. Polese, L. Bonati, H. Cheng, and T. Melodia, "dApps: Distributed Applications for Real-Time Inference and Control in O-RAN," *IEEE Communications Magazine*, vol. 60, no. 11, pp. 52–58, November 2022.

[26] M. Polese, V. Ariyarathna, P. Sen, J. V. Siles, F. Restuccia, T. Melodia, and J. M. Jornet, "Dynamic spectrum sharing between active and passive users above 100 ghz," *Communications Engineering, Nature*, vol. 1, no. 1, pp. 1–9, 2022.

[27] L. Bonati, M. Polese, S. D'Oro, S. Basagni, and T. Melodia, "OpenRAN Gym: AI/ML development, data collection, and testing for O-RAN on PAWR platforms," *Computer Networks*, vol. 220, p. 109502, 2023.

[28] A. Lacava, M. Polese, R. Sivaraj, R. Soundrarajan, B. S. Bhati, T. Singh, T. Zugno, F. Cuomo, and T. Melodia, "Programmable and Customized Intelligence for Traffic Steering in 5G Networks Using Open RAN Architectures," *IEEE Transactions on Mobile Computing*, pp. 1–16, 2023.

[29] M. Polese, X. Cantos-Roman, A. Singh, M. J. Marcus, T. J. Maccarone, T. Melodia, and J. M. Jornet, "Coexistence and Spectrum Sharing Above 100 GHz," *Proceedings of the IEEE*, vol. 111, no. 8, pp. 928–954, Aug 2023.

[30] M. Polese, L. Bonati, S. D'Oro, S. Basagni, and T. Melodia, "Understanding O-RAN: Architecture, Interfaces, Algorithms, Security, and Research Challenges," *IEEE Communications Surveys & Tutorials*, vol. 25, no. 2, pp. 1376–1411, Second quarter 2023.

[31] L. Bonati, M. Polese, S. D'Oro, S. Basagni, and T. Melodia, "NeutRAN: An Open RAN Neutral Host Architecture for Zero-Touch RAN and Spectrum Sharing," *IEEE Transactions on Mobile Computing*, pp. 1–14, 2023.

[32] P. Testolina, M. Polese, J. M. Jornet, and T. Melodia, "Modeling interference for the coexistence of 6g networks and passive sensing systems," *arXiv preprint arXiv:2307.14848*, 2023.

[33] J. Groen, S. DOro, U. Demir, L. Bonati, M. Polese, T. Melodia, and K. Chowdhury, "Implementing and evaluating security in o-ran: Interfaces, intelligence, and platforms," *arXiv preprint arXiv:2304.11125*, 2023.

[34] D. Villa, M. Tehrani-Moayyed, C. P. Robinson, L. Bonati, P. Johari, M. Polese, S. Basagni, and T. Melodia, "Colosseum as a digital twin: Bridging real-world experimentation and wireless network emulation," *arXiv preprint arXiv:2303.17063*, 2023.

Conferences

[35] M. Polese, M. Centenaro, A. Zanella, and M. Zorzi, "M2M massive access in LTE: RACH performance evaluation in a Smart City scenario," in *IEEE International Conference on Communications (ICC)*, May 2016, pp. 1–6.

[36] M. Polese, M. Mezzavilla, and M. Zorzi, "Performance Comparison of Dual Connectivity and Hard Handover for LTE-5G Tight Integration," in *Proceedings of the 9th EAI International Conference on Simulation Tools and Techniques*, ser. SIMUTOOLS'16, Prague, Czech Republic, 2016, pp. 118–123.

[37] F. Chiariotti, D. D. Testa, M. Polese, A. Zanella, G. M. D. Nunzio, and M. Zorzi, "Learning methods for long-term channel gain prediction in wireless networks," in *International Conference on Computing, Networking and Communications (ICNC)*, Jan 2017, pp. 162–166.

[38] M. Polese, R. Jana, and M. Zorzi, "TCP in 5G mmWave Networks: Link Level Retransmissions and MP-TCP," in *IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS)*, May 2017.

[39] E. Lovisotto, E. Vianello, D. Cazzaro, M. Polese, F. Chiariotti, D. Zucchetto, A. Zanella, and M. Zorzi, "Cell Traffic Prediction Using Joint Spatio-Temporal Information," in *6th International Conference on Circuits and Systems Technologies (MOCAST)*, May 2017.

[40] M. Zhang, M. Polese, M. Mezzavilla, S. Rangan, and M. Zorzi, "ns-3 Implementation of the 3GPP MIMO Channel Model for Frequency Spectrum Above 6 GHz," in *Proceedings of the Workshop on ns-3*. Porto, Portugal: ACM, 2017, pp. 71–78. [Online]. Available: http://doi.acm.org/10.1145/3067665.3067678

[41] T. Azzino, M. Drago, M. Polese, A. Zanella, and M. Zorzi, "X-TCP: a cross layer approach for TCP uplink flows in mmwave networks," in *16th Annual Mediterranean Ad Hoc Networking Workshop (Med-Hoc-Net)*, June 2017.

[42] M. Dalla Cia, F. Mason, D. Peron, F. Chiariotti, M. Polese, T. Mahmoodi, M. Zorzi, and A. Zanella, "Mobility-aware Handover Strategies in Smart Cities," in *International Symposium on Wireless Communication Systems (ISWCS)*, August 2017.

[43] M. Polese, M. Mezzavilla, S. Rangan, and M. Zorzi, "Mobility Management for TCP in mmWave Networks," in *Proceedings of the 1st ACM Workshop on Millimeter-Wave Networks and Sensing Systems 2017*, ser. mmNets '17. Snowbird, Utah, USA: ACM, 2017, pp. 11–16.

[44] M. Gentil, A. Galeazzi, F. Chiariotti, M. Polese, A. Zanella, and M. Zorzi, "A deep neural network approach for customized prediction of mobile devices discharging time," in *IEEE Global Communications Conference (GLOBECOM)*, Dec 2017, pp. 1–6.

[45] M. Polese, M. Mezzavilla, M. Zhang, J. Zhu, S. Rangan, S. Panwar, and M. Zorzi, "milliProxy: A TCP proxy architecture for 5G mmWave cellular systems," in *51st Asilomar Conference on Signals, Systems, and Computers*, Oct 2017, pp. 951–957.

[46] M. Polese, M. Mezzavilla, S. Rangan, C. Kessler, and M. Zorzi, "mmwave for future public safety communications," in *Proceedings of the First CoNEXT Workshop on ICT Tools for Emergency Networks and DisastEr Relief*, ser. I-TENDER '17. Incheon, Republic of Korea: ACM, 2017, pp. 44–49. [Online]. Available: http://doi.acm.org/10.1145/3152896.3152905

[47] M. Drago, T. Azzino, M. Polese, C. Stefanovic, and M. Zorzi, "Reliable Video Streaming over mmWave with Multi Connectivity and Network Coding," in *International Conference on Computing, Networking and Communications (ICNC)*, March 2018, pp. 508–512.

[48] T. Zugno, M. Polese, and M. Zorzi, "Integration of Carrier Aggregation and Dual Connectivity for the ns-3 mmWave Module," in *Proceedings of the 10th Workshop on ns-3*, ser. WNS3 '18. Surathkal, India: ACM, 2018, pp. 45–52. [Online]. Available: http://doi.acm.org/10.1145/3199902.3199909

[49] M. Polese and M. Zorzi, "Impact of Channel Models on the End-to-End Performance of Mmwave Cellular Networks," in *IEEE 19th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, June 2018, pp. 1–5.

[50] M. Giordani, M. Polese, A. Roy, D. Castor, and M. Zorzi, "Initial access frameworks for 3GPP NR at mmWave frequencies," in *17th Annual Mediterranean Ad Hoc Networking Workshop (Med-Hoc-Net)*, June 2018, pp. 1–8.

[51] M. Polese, M. Giordani, A. Roy, S. Goyal, D. Castor, and M. Zorzi, "End-to-End Simulation of Integrated Access and Backhaul at mmWaves," in *IEEE 23rd International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)*, Sep. 2018, pp. 1–7.

[52] M. Polese, M. Giordani, A. Roy, D. Castor, and M. Zorzi, "Distributed Path Selection Strategies for Integrated Access and Backhaul at mmWaves," in *IEEE Global Communications Conference (GLOBECOM)*, Dec 2018.

[53] M. Rebato, M. Polese, and M. Zorzi, "Multi-Sector and Multi-Panel Performance in 5G mmWave Cellular Networks," in *IEEE Global Communications Conference (GLOBECOM)*, Dec 2018, pp. 1–6.

[54] M. Polese, R. Jana, V. Kounev, K. Zhang, S. Deb, and M. Zorzi, "Exploiting spatial correlation for improved user prediction in 5G cellular networks," in *Proceedings of the Information Theory and Applications Workshop*, ser. ITA '19, San Diego, 2019.

[55] W. Xia, M. Polese, M. Mezzavilla, G. Loianno, S. Rangan, and M. Zorzi, "Millimeter Wave Remote UAV Control and Communications for Public Safety Scenarios," in *Proceedings of the 1st International Workshop on Internet of Autonomous Unmanned Vehicles*, ser. IAUV '19, Boston, MA, 2019.

[56] M. Polese, T. Zugno, and M. Zorzi, "Implementation of Reference Public Safety Scenarios in ns-3," in *Proceedings of the 2019 Workshop on ns-3*, ser. WNS3 2019. Florence, Italy: ACM, 2019, pp. 73–80. [Online]. Available: http://doi.acm.org/10.1145/3321349.3321356

[57] A. De Biasio, F. Chiariotti, M. Polese, A. Zanella, and M. Zorzi, "A QUIC Implementation for ns-3," in *Proceedings of the Workshop on ns-3*, ser. WNS3 2019. Florence, Italy: ACM, 2019, pp. 1–8. [Online]. Available: http://doi.acm.org/10.1145/3321349.3321351

[58] T. Zugno, M. Polese, M. Lecci, and M. Zorzi, "Simulation of Next-generation Cellular Networks with ns-3: Open Challenges and New Directions," in *Proceedings of the 2019 Workshop on Next-Generation Wireless with ns-3*, ser. WNGW 2019. Florence, Italy: ACM, 2019, pp. 38–41. [Online]. Available: http://doi.acm.org/10.1145/3337941.3337951

[59] M. Polese, F. Restuccia, A. Gosain, J. Jornet, S. Bhardwaj, V. Ariyarathna, S. Mandal, K. Zheng, A. Dhananjay, M. Mezzavilla, J. Buckwalter, M. Rodwell, X. Wang, M. Zorzi, A. Madanayake, and T. Melodia, "MillimeTera: Toward A Large-Scale Open-Source mmWave and Terahertz Experimental Testbed," in *Proceedings of the 3rd ACM Workshop on Millimeter-Wave Networks and Sensing Systems*, ser. mmNets '19. Los Cabos, Mexico: ACM, 2019.

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