
ANDREAS F. MOLISCH
List of Publications

Research publications

Publications authored, co-authored, or edited

- *books*, p. 2
- *book chapters*, p. 4
- *journal papers*
 - international journals p. 7
 - national journals p. 37
- *reviewed conference papers*
 - international conferences p. 38
 - national/continental conferences p. 70
- *tutorials* p. 76
- *other contributions* (keynotes, invited talks, etc.) p. 80

Patents

- *patents* p. 98

Industrial contributions

- *standardization contributions* p. 105
- *research reports* p. 110

Citation Statistics

h-index: 119 (Google Scholar)

Number of citations: >80,000 (Google Scholar): see also

<https://scholar.google.com/citations?user=W0wwrucAAAAJ&hl=en&oi=ao>

BOOKS**2022/2011/2005**

- B-5 **A. F. Molisch**, “Wireless Communications”,
First edition: 668 pages, IEEE Press – Wiley (2005);
translation into Chinese, PHEI.
Second edition: 888 pages, IEEE Press – Wiley (2011);
translation into Chinese: Electronic Industry Press.
Third edition, “Wireless Communications - From fundamentals to Beyond 5G” (1005 pages),
IEEE Press-Wiley (2022).

A textbook on wireless for advanced undergraduate and graduate students as well as practicing engineers and researchers. It provides a complete overview of the physical layer of wireless communications, including channels and propagation, transceivers (modulation, coding, MIMO), multi-user systems (scheduling, cognitive radio) and a description of standardized systems. A second edition appeared in early 2011, a third, expanded and completely revised edition in 2022 (copyright year 2023).

2022

- B-4 T. S. Rappaport, K. A. Remley, C. Gentile, **A. F. Molisch**, and A. Zajic (eds.), “Radio Propagation Measurements and Channel Modeling - Best Practices for Millimeter-Wave and Sub-Terahertz Frequencies, Cambridge University Press (2022).

This edited book provides a detailed description of measurement and modeling techniques for millimeter-wave and sub-THz frequencies. It is the output of the NIST mm-wave channel modeling group, where I co-chaired the channel modeling group.

2006

- B-3 M. G. diBenedetto, T. Kaiser, **A. F. Molisch**, I. Oppermann, C. Politano, and D. Porcino (eds.), "UWB. Communication Systems--A Comprehensive .Overview", Hindawi Publishing (2006).

This edited book provides an overview of all aspects of ultrawideband communications, including propagation channels, system design, international standardization and frequency regulation.

2000

- B-2 **A.F. Molisch** (ed.), "Wireless wideband digital communications", 547+xvi pages, Prentice-Hall (2000); translation into Chinese, PHEI (2002).

An (edited) research monograph that describes the effects of using wide bandwidths on the wireless transmission of data. Both the negative (error floor) and positive (enhanced diversity) effects are pointed out. All common wideband methods, including single-carrier transmission with and without equalizers, CDMA, and OFDM, are discussed.

1998

- B-1 **A.F. Molisch** and B.P. Oehry, "Radiation trapping in atomic vapors", 510+xxvi pages, Oxford University Press, Oxford, U.K. (1998).

A comprehensive description of the area of radiation trapping, where resonance radiation created by one atom might be absorbed and reemitted by another atom, and this process might be repeated multiple times. Though the topic has been studied in the literature for many years, this book is the first comprehensive and self-consistent description of the field.

BOOK CHAPTERS**2022**

BC-22 M. C. Lee, M. Ji, and **A. F. Molisch**, “Scaling Laws for Cache-Aided Device-to-Device Networks for Wireless Video”, in H. V. Poor and W. Chen, *Edge Caching for Mobile Networks*, Cambridge University Press (2022).

2021

BC-21 **A. F. Molisch**, T. Choi, N. Abbasi, F. Rottenberg, and J. Zhang “Millimeter-wave channels”, in Wiley 5G Encyclopedia, pages 1-46, doi = <https://doi.org/10.1002/9781119471509.w5GRef042>, url = <https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119471509.w5GRef042>,

2019

BC-20 C. Huang, R. He, **A. F. Molisch**, Z. Zhong, and, and B. Ai, “Machine Learning Enabled Channel Modeling”, in R. He and Z. Ding (eds.), “Applications of Machine Learning in Wireless Communications”, IET Press (2019).

2017

BC-19 S. Avestimehr and **A. F. Molisch**, “Distributed caching for enhancing communications efficiency”, in M. Chiang (ed.), “Fog Networks”, Wiley (2017).

2016

BC-18 **A. F. Molisch**, “3D Propagation Channels: Modeling and Measurements”, in J. Zhang and F. Luo, “Signal Processing for 5G: Algorithms and Implementations”, Wiley (2015).

BC-17 **A. F. Molisch**, M. Ji, J. Kim, A. Tehrani, D. Burghal “Device-to-Device Communications”, in S. Talwar and R. Vannithamby, “Towards 5G: Applications, Requirements & Candidate Technologies”, Wiley (2015).

2012

BC-16 **A. F. Molisch**, “Propagation and channel modeling principles”, in G. de la Roche, A. A. Glazunov, and B. Allen, “LTE Advanced and Beyond Wireless Networks: Channel Modeling and Propagation”, Wiley (2012).

BC-15 L. Bernado, N. Czink, T. Zemen, A. Paier, F. Tufvesson, C. Mecklenbraueker, and **A. F. Molisch**, “Vehicular channels”, in G. de la Roche, A. A. Glazunov, and B. Allen, “LTE Advanced and Beyond Wireless Networks: Channel Modeling and Propagation”, Wiley (2012)

BC-14 L. Greenstein, M. Shafi, and **A. F. Molisch**, “Propagation effects in cognitive radio”, in E. Biglieri et al. (eds.), “Cognitive Radio Principles”, Cambridge University Press (2012).

2011

BC-13 Y. Tian, C. Yang, and **A. F. Molisch**, “Uplink Centralized Joint Detection”, in P. Marsch, G. Fettweis (ed.), “Coordinated Multi-Point in Mobile Communications”, Cambridge University Press (2011).

BC-12 **A. F. Molisch**, N. B. Mehta, and S. Draper, “Cooperative Communications for Reliability”, in I. Guvenc, S. Gezici, Z. Sahinoglu, and U. Kozat, “Reliable Communications for Short-Range Wireless Systems”, Cambridge University Press (2011).

2006

BC-11 **A. F. Molisch**, “Introduction to UWB signals and systems”, in E. Okon, B. Allen, W. Malik, D. Edwards, and A. K. Brown (eds.), “Ultra Wideband: Antennas and Propagation for Communications, Radar and Imaging”, Wiley, (2006).

BC-10 **A. F. Molisch** and H. Hofstetter, “The COST 273 MIMO channel model”, in L. Correia (ed.), “Mobile Broadband Multimedia Networks”, Academic Press, (2006).

BC-9 N. Mehta and **A. F. Molisch**, “Antenna selection in MIMO systems,” in G. Tsoulos (ed.), “MIMO antenna technology for wireless communications,” CRC press (2006).

2005

BC-8 **A. F. Molisch** and F. Tufvesson, “MIMO Channel Capacity and Measurements”, in T. Kaiser (ed.), “Smart antennas in Europe – state of the art”, EURASIP Publishing, (2005)

BC-7 **A. F. Molisch** et al., “Ultrawideband Propagation Channels”, in “UWB communications systems – a comprehensive overview”, G. DiBenedetto et al. (ed.), EURASIP Publishing, 2006.

2004

BC-6 **A.F. Molisch** and F. Tufvesson, “Multipath propagation models for broadband wireless systems”, Chapter 2 in “Digital Signal Processing for Wireless Communications Handbook”, CRC Press, M. Ibnkahla (ed.), invited, pp. 2.1-2.43, 2004.

2001

BC-5 M. Steinbauer and **A. F. Molisch** (eds.), “Directional channel models”, Chapter 3.2 (pp. 132-193) of “Flexible Personalized Wireless Communications”, L. Correia (ed.), Wiley, 2001

BC-4 **A. F. Molisch**, “DECT and adaptive sampling”, in “Flexible Personalized Wireless Communications”, L. Correia (ed.), Wiley, 2001

2000

BC -3 **A. F. Molisch**, “Introduction to wideband wireless systems”, Part 1 (pp. 1-62) of A.F. Molisch (ed.), "Wireless wideband digital communications", Prentice-Hall, 2000

BC -2 **A. F. Molisch**, "Unequalized systems", Part 2 (pp. 63-154) of A.F. Molisch (ed.), "Wireless wideband digital communications", Prentice-Hall, 2000

1999

BC -1 L.B. Lopes and **A.F. Molisch**, "Research into performance and enhancement of second generation systems: GSM and DECT", pp. 209-284 in "Digital Mobile Radio - the view of COST 231", E. Damosso and L. Correia (eds.), European Union Publications 1999.

PAPERS IN INTERNATIONAL REVIEWED JOURNALS**2026**

- J-330 A. Rizwan, D. J. Han, M. Ferdous Pervej, C. G. Brinton, **A. F. Molisch**, and M. Choi, “Efficient Split Learning with Overlapping Areas: Handling Distribution Shift in Multi-Cell Networks”, *IEEE Trans. Networking*, accepted (2025).
- J-329 X. Su, Z. Jiang, M. Ramakrishnan, H. Zhou, A. Alhaddad, M. Tur, **A. F. Molisch**, and A. E. Willner, “Longitudinal Structuring of Artificial Noise Electromagnetic Field for Enhanced Physical-Layer Security in Line-of-Sight Wireless Communications”, *IEEE J. Lightwave Technology*, accepted (2026).

2025

- J-328 V. N. Vitale, A. Tulino, **A. F. Molisch**, and J. Llorca, “A Flexible Multi-Agent Deep Reinforcement Learning Framework for Dynamic Routing and Scheduling of Latency-Critical Services”, *IEEE Trans. Networking*, accepted (2025).
- J-327 T. Choi, Y. Zhang, I. Kanno, M. Ito, and **A. F. Molisch**, “CUNEC: A Path Loss Model for Urban Cell-Free Massive MIMO Networks”, *IEEE Trans. Wireless Comm.*, accepted (2025).
- J-326 J. Gomez-Ponce, D. Chizhik, J. Du, R. Valenzuela, K. Arana, N. A. Abbasi, and **A. F. Molisch**, “Efficient Integration of Street Clutter into mm-Wave Ray Tracing in Urban Environments based on more than 1000 measurements”, *IEEE Trans. Antennas Prop.*, accepted (2025).
- J-325 H. Hammoud, Y. Zhang, Z. Cheng, S. Sangodoyin, M. Hofer, F. Pasic, T. M. Pohl, R. Závorka, A. Prokes, T. Zemen, C. F. Mecklenbräuker, and **A. F. Molisch**, “Double-Directional V2V Channel Measurement using ReRoMA at 60 GHz”, *IEEE Trans. Vehicular Techn.*, accepted (2025).
- J-324 F. Pasic, M. Hofer, M. Mussbah, S. Sangodoyin, S. Schwarz, T. Zemen, M. Rupp, **A. F. Molisch**, and C. F. Mecklenbräuker, “Millimeter Wave MIMO Channel Estimation using sub-6,GHz Out-of-Band Information”, *IEEE Trans. Comm.*, **73**, 10692-10708 (2025).
- J-323 O. G. Serbetci, D. Burghal, and **A. F. Molisch**, “Wireless Channel Aware Data Augmentation Methods for Deep Learning-Based Indoor Localization”, *IEEE Trans. Wireless Comm.*, **24**, 9811 - 9825 (2025).
- J-322 N. Nataraja, K. Ali, F. Bai, and **A. F. Molisch**, “Cars and Trucks as Blockers and Reflectors in Vehicular ISAC Systems: Theory, Measurements, and Applications”, *IEEE Vehicular Techn. Mag.*, **20 (3)**, 41-48 (2025).

- J-321 T. Zemen, J. Gomez-Ponce, A. Chandra, M. Walter, E. Aksoy, R. He, D. Matolak, M. Kim, J. Takada, S. Salous, R. Valenzuela, **A. F. Molisch**, „Site-Specific Radio Channel Representation for 5G and 6G“, *IEEE Comm Mag.*, **63** (6), 106-113 (2025).
- J-320 N. A. Abbasi, T Pal, K. Arana, V. Vasudevan, J. Gomez-Ponce, Y. H. Nam, J. Zhang, and A. F. Molisch, “An Ultra-Wideband Study of Vegetation Impact on Upper Midband / FR3 Communication”, *IEEE Wireless Comm Lett*, **14**, 2302-2305 (2025).
- J-319 M. Neuman, D. Burghal, and **A. F. Molisch**, „Impact of Channel and System Parameters on Performance Evaluation of Frequency Extrapolation Using Machine Learning“, *IEEE Open J. Comm. Soc.*, **6**, 4840-4853 (2025).
- J-318 G. Castro, T. Choi, H. C. Chung, Q. Ma, **A. F. Molisch**, and G. Rebeiz, “Millimeter-Wave Phased-Array Channel Sounder for Double Directional Communication and Localization Channel Descriptions”, *IEEE Trans. Ant. Prop.*, **73**, 1922-1937 (2025).
- J-317 H. Baek, G. S. Kim, S. Park, **A.F. Molisch**, J. Kim, “Slimmable Federated Reinforcement Learning for Energy-Efficient Proactive Caching”, *IEEE Trans. Networking.*, **33**, 2079-2094 (2025).
- J-316 L. Chu, A. Alghafis, and **A. F. Molisch**, “Exploiting Semantic Localization in Highly Dynamic Wireless Networks using Deep Homoscedastic Domain Adaptation”, *IEEE Trans. Comm*, **73**, 2032-2046 (2025).
- J-315 Y. Zhang, T. Choi, Z. Cheng, J. Gomez-Ponce, I. Kanno, M. Ito, and **A. F. Molisch**, “Cell-free Massive MIMO Channels in an Urban Environment - Measurements and Channel Statistics”, *IEEE Trans. Wireless Comm.***24**. 5709-5722 (2025).
- J-314 N. K. Nataraja, S. Sharma, R. Wang, K. Ali, F. Bai, and **A. F. Molisch**, “Integrated Sensing and Communication (ISAC) for Vehicles: Bistatic Radar with 5G-NR Signals“, *IEEE Trans. Vehicular Techn.***74**, 6121-6137 (2025).
- J-313 F. Pervej and **A. F. Molisch**, “Resource-Aware Hierarchical Federated Learning in Wireless Video Caching Networks“, *IEEE Trans. Wireless Comm.*, **24**, 165-180 (2025).
- J-312 H. Hammoud, Y. Zhang, Z. Cheng, S. Sangodoyin, M. Hofer, F. Pasic, T. M. Pohl, R. Závorka, A. Prokes, T. Zemen, C. Mecklenbräuker, **A. F. Molisch**, “A Novel Low-Cost Channel Sounder for Double-Directionally Resolved Measurements in the MmWave band”, *IEEE Trans. Wireless Comm.*, **24**, 340-354 (2025).
- J-311 H. Hammoud, Z. Cheng, J. Gomez-Ponce, S. Sangodoyin, J. Kahn, and **A. F. Molisch**, “Propagation Channel Measurements for Indoor-to-Outdoor Communications for Device-to-Device Public Safety Applications“, *IEEE Open Journal of the Communication Society*, **6**, 154-170 (2025).
- J-310 **A. F. Molisch**, C. F. Mecklenbrauker, T. Zemen, A. Prokes, M. Hofer, F. Pasic, and H.

Hammoud, “Millimeter-wave V2X Channel Measurements in Urban Environments”, invited paper, *IEEE Open Journal on Vehicular Technology*, **6**, 520-541 (2025).

2024

- J-309 Z. Cheng and **A. F. Molisch**, “Multi-cluster Frequency-angle Diffuse Scattering Model and its Estimation”, *IEEE Open Journal of the Communication Society*, **5**, 7176-7196 (2024).
- J-308 C. Aldana, K. Takamizawa, S. Soora, C. Kennedy, M. Mehrnoush, J. Cook-Ramirez, C. Hu, and **A. F. Molisch**, “Body Area Network Channel Measurement and Modeling for Extended-Reality Applications”, *IEEE Open Journal of the Communication Society*, **5**, 7715-7729 (2024).
- J-307 J. Y. Lee and **A. F. Molisch**, “A Scalable and Generalizable Pathloss Map Prediction”, *IEEE Trans. Wireless Comm*, **23**, 17793-17806 (2024).
- J-306 A. Pradhan, J. K. Devineni, **A. F. Molisch**, and H. S. Dhillon, “Novel LoS β - γ THz Channel Unifying Molecular Re-radiation Manifestations”, *IEEE Trans. Vehicular Techn.* **73**, 15653-15658, 2024.
- J-305 **A. F. Molisch**, J. Gomez-Ponce, N. Abbasi, G. Xu, and J. Zhang, “Properties of Sub-THz Propagation Channels and Their Impact on System Behavior: Channel Measurements and Transmission Experiments”, *IEEE Wireless Communications* **31 (1)**, 18-24 (2024).
- J-304 D. Burghal, J. Gomez-Ponce, N. A. Abbasi, and **A. F. Molisch**, “Estimation of Isotropic Pathloss from Directional Channel Measurements in Azimuth and Elevation”, *IEEE Antennas Prop. Lett.*, **23**, 2145-2149 (2024).
- J-303 J. Y. Lee, C. Park, S. Park, and **A. F. Molisch**, “Handover Protocol Learning for LEO Satellite Networks: Access Delay and Collision Minimization”, *IEEE Trans. Wireless Comm.*, **23**, 7624-7637 (2024).
- J-302 J. Gomez-Ponce, N. A. Abbasi, Z. Cheng, S. Abu-Surra, G. Xu, J. Zhang, and **A. F. Molisch**, “Impact of noisy measurements with Fourier-based evaluation on condensed channel parameters”, *IEEE Trans. Wireless Comm.*, **23**, 8136-8152 (2024).
- J-301 N. A. Abbasi, J. Gomez-Ponce, R. Kondaveti, A. Kumar, E. Bhagat, R. N S Rao, S. Abu-Surra, G. Xu, C. Zhang, and **A. F. Molisch**, “THz Band Channel Measurements and Statistical Modeling for Urban Microcellular Environments”, *IEEE Trans. Wireless Comm.*, **23**, 6719-6734 (2024).
- J-300 Y. Cai, J. Llorca, A. Tulino, and **A. F. Molisch**, “Joint Compute-Caching-Communication Control for Online Data-Intensive Service Delivery”, *IEEE Trans. Mobile Comp.*, **23**, 4617 - 4633 (2024).

- J-299 A. Pradhan, A. Abd-Elmagid, H. Dhillon, and **A. F. Molisch**, “Robust Optimization of RIS in Terahertz under Extreme Molecular Re-radiation Manifestations”, *IEEE Trans. Wireless Comm.*, **23**, 1783-1797 (2024).

2023

- J-298 D. Burghal, Y. Li, P. Madad, Y. Hu, J. Jeon, J. Y. Cho, **A. F. Molisch**, and J. Zhang, “Enhanced AI-Based CSI Prediction Solutions for Massive MIMO in 5G and 6G Systems”, *IEEE Access* **11**, 117810-117825 (2023).

- J-297 B. Antwi-Boasiako, P. Anokye, D. K. P. Asiedu, R. K. Ahiadormey, K.J. Lee, and **A. F. Molisch**, “Multi-Stream Transmission in Massive MIMO Systems with Full-Duplex Bi-Directional Communication Links”, *IEEE Trans. Vehicular Comm.*, **72**, 12367-12372 (2023).

- J-296 Y. Cai, J. Llorca, A. Tulino, and **A. F. Molisch**, “Decentralized Control of Distributed Cloud Networks with Generalized Network Flows”, *IEEE Trans. Comm* **71**, 256-268 (2023).

- J-295 F. Sheikh, A. Prokscha, J. M. Eckhardt, T. Doeker, N. A. Abbasi, J. Gomez-Ponce, B. Sievert, J. T. Svejda, A. Rennings, J. Barowski, C.Schulz, I. Rolfes, D. Erni, **A. F. Molisch**, T. Kurner, and T. Kaiser, “THz Measurements, Antennas, and Simulations: From the Past to the Future”, *IEEE J. of Microwaves* **3**, 289-304 (2023).

- J-294 X. Su, H. Song, H. Zhou, K. Zou, Y. Duan, N. Karapetyan, R. Zhang, A. Minoofar, H. Song, K. Pang, S. Zach, **A. F. Molisch**, M. Tur, and A. E. Willner, “A THz Integrated Circuit based on a Pixel Array to Mode Multiplex Two 10-Gbit/s QPSK Channels Each on a Different OAM Beam”, *IEEE J. Lightwave Techn.*, **41**, 1095-1103 (2023).

- J-293 M. C. Lee and **A. F. Molisch**, “Optimal Delay-Outage Analysis for Noise-Limited Wireless Networks with Caching, Computing, and Communications”, *IEEE Trans. Wireless Comm.* **22**, 1417-1431 (2023).

- J-292 N. Abbasi, J. Gomez, R. Kondaveti, S. Shaikbepari, S. Rao, S. Abu-Surra, G. Xu, J. C. Zhang, and **A. F. Molisch**, “THz Band Channel Measurements and Statistical Modeling for Urban D2D Environments”, *IEEE Trans. Wireless Comm.*, **22**, 1466-1479 (2023).

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- J-291 M. Ito, I. Kanno, K. Yamazaki, Y. Kishi, W. Y. Chen, T. Choi, and **A. F. Molisch**, “Impact of Antenna Distribution on Spectral and Energy Efficiency of Cell-Free Massive MIMO with Transmit Power Control Algorithms”, *IEEE Open Journal Comm.* **3**, 1615-1629 (2022).

- J-290 A. E. Willner, X. Su, H. Zhou, A. Minoofar, Z. Zhao, R. Zhang, M. Tur, **A. F. Molisch**, H. Sasaki, A. Almainan, and, “High capacity terahertz communication systems based on multiple orbital-angular-momentum beams”, *Journal of Optics* **12**, 124002 (2022).

- J-289 X. Su, R. Zhang, Z. Zhao, H. Song, A. Minoofar, N. Hu, H. Zhou, K. Zou, K. Pang, H. Song, B. Lynn, S. Zach, M. Tur, **A. F. Molisch**, H. Sasaki, D. Lee, and A. E. Willner, “Receiver Aperture and Multipath Effects on Power Loss and Modal Crosstalk in a THz Wireless Link using Orbital-Angular-Momentum Multiplexing”, *Scientific Reports* **12**, Article 14053 (2022).
- J-288 V. Ratnam, J. Mo, A. Alammouri, B. L. Ng, S. Abu-Surra, G. Xu, C. Zhang, and **A. F. Molisch**, “Joint phase-time arrays: a paradigm for frequency-dependent analog beamforming in 6G”, *IEEE Access* **10**, 73364-73377 (2022).
- J-287 H. Zhou, X. Su, A. Minoofar, R. Zhou, H. Song, K. Pang, h. Qian, H. Hu, Z. Zhao, A. Almainan, S. Zach, M. Tur, **A. F. Molisch**, H. Sasaki, D. Lee, A. E. Willner, “Utilizing Multiplexing of Structured THz Beams Carrying Orbital-Angular-Momentum for High-Capacity Communications”, *Optics Express* **30**, 25418-25432 (2022).
- J-286 C. Huang, R. Wang, C. X. Wang, T. Pan, and **A. F. Molisch**, “A Geometry-Based Stochastic Model for Truck Communication Channels in Freeway Scenarios”, *IEEE Trans. Comm.*, **70**, 5572-5586 (2022).
- J-285 C. Han, Y. Wang, Y. Li, Y. Chen, N. Abbasi, T. Kürner, and **A. F. Molisch**, “Terahertz Wireless Channels: A Holistic Survey on Measurement, Modeling, and Analysis”, *IEEE Communications Surveys and Tutorials* **24**, 1670-1707 (2022).
- J-284 J. Gomez, N. Abbasi, A. E. Willner, J. Zhang, and **A. F. Molisch**, “Directionally Resolved Measurement and Modeling of THz Band Propagation Channels (invited paper)”, *IEEE Open J. Antennas and Propagation* **3**, 663-686 (2022).
- J-283 Y. Cai, J. Llorca, A. Tulino, and **A. F. Molisch**, “Ultra-Reliable Distributed Cloud Network Control with End-to-End Latency Constraints”, *IEEE/ACM Trans. Networking*, **30**, 2505-2520 (2022).
- J-282 D. Burghal, R. Wang, A. Alghafis, and **A. F. Molisch**, “Supervised ML Solution for Band Assignment in Dual-Band Systems with Omni and Directional Antennas”, *IEEE Trans. Wireless Comm.*, **21**, 7550-7565 (2022).
- J-281 S. Jiang, W. Wang, Y. Miao, W. Fan, and **A. F. Molisch**, “A Survey of Dense Multipath and Its Impact on Wireless Systems”, *IEEE Open Journal of Antennas and Propagation*, **3**, 435-460 (2022).
- J-280 J. Gomez, N. A. Abbasi, R. Kondaveti, A. Kumar, S. Abu-Surra, G. Xu, C. Zhang, and **A. F. Molisch**, “Impact of common reflecting and absorbing building materials on THz multipath channels”, *Radio Science* **57**, 1-16 (2022).
- J-279 A. Minoofar, X. Su, H. Zhou, F. Alishahi, K. Zou, H. Song, R. Zhang, K. Pang, S. Zach, M. Tur, **A. F. Molisch**, H. Sasaki, D. Lee, and A. E. Willner, “Experimental Demonstration of

- sub-THz Wireless Communications Using Multiplexing of Laguerre-Gaussian Beams When Varying Two Different Modal Indices”, *IEEE J. Lightwave Techn.* **40**, 3285-3292 (2022).
- J-278 M.C. Lee, M. Ji, and **A. F. Molisch**, “Throughput-Outage Scaling Behaviors for Wireless Single-Hop D2D Caching Networks with Physical Model”, *IEEE Trans. Wireless Comm.* **21**, 6523-6538 (2022).
- J-277 C. Huang, R. He, B. Ai, **A. F. Molisch**, B. K. Lau, K. Haneda, B. Liu, C. X. Wang, M. Yang, C. Oestges, and Z. Zhong, “Artificial Intelligence Enabled Radio Propagation for Communications— Part II: Scenario Identification and Channel Modeling”, *IEEE Trans. Antennas Prop.*, **70**, 3955-3969 (2022).
- J-276 C. Huang, R. He, B. Ai, **A. F. Molisch**, B. K. Lau, K. Haneda, B. Liu, C. X. Wang, M. Yang, C. Oestges, and Z. Zhong, “Artificial Intelligence Enabled Radio Propagation for Communications—Part I: Channel Characterization and Antenna-Channel Optimization”, *IEEE Trans. Antennas Prop.*, **70**, 3939-3954 (2022).
- J-275 W. J. Yun, D. Kwon, M. Choi, J. Kim, G. Caire, and **A. F. Molisch**, “Quality-Aware Deep Reinforcement Learning for Streaming in Infrastructure-Assisted Connected Vehicles”, *IEEE Trans. Vehicular Techn.*, **71**, 2002-2017 (2022).
- J-274 P. Koivumaki, **A. F. Molisch**, and K. Haneda, “Line-of-Sight Probability in Cluttered Urban Microcells: Analyses Using Poisson Point Process and Point Cloud”, *IEEE Trans. Antennas Prop.* **70**, 2161-2173 (2022).
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- J-273 H. Song, X. Su, H. Song, R. Zhang, Z. Zhao, N. Hu, K. Zou, H. Zhou, K. Pang, C. Liu, K. Manukyan, A. Almainan, **A. F. Molisch**, R. W. Boyd, S. Zach, M. Tur, and A. E. Willner, “Simultaneous turbulence mitigation and channel demultiplexing using a single multi-plane light convertor for a free-space optical link with two 100-Gbit/s OAM channels”, *Optics Communications*, 501, p.127359 (2021).
- J-272 T. Choi, M. Ito, I. Kanno, J. Gomez, C. Bullard, T. Ohseki, K. Yamazaki, and **A. F. Molisch**, “Energy Efficiency of Uplink Cell-Free Massive MIMO With Transmit Power Control in Measured Propagation Channel”, *IEEE Open Journal of Circuits and Systems*, **2**, 792-804 (2021).
- J-271 A. E. Willner, Z. Zhao, C. Liu, R. Zhang, H. Song, K. Pang, K. Manukyan, H. Song, X. Su, G. Xie, Y. Ren, Y. Yan, M. Tur, **A. F. Molisch**, R. W. Boyd, H. Zhou, N. Hu, A. Minoofar, and H. Huang, “Perspectives on advances in high-capacity, free-space communications using multiplexing of orbital-angular-momentum beams”, *APL Photon.* **6**, 030901 (2021); cover of APL Photonics March 2021 issue.
- J-270 H. Tataria, M. Shafi, **A. F. Molisch**, M. Dohler, H. Sjöland, and F. Tufvesson, “6G Wireless

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- C-01 **A.F. Molisch**, B.P. Oehry, and W. Schupita: "An Improved Milne Diffusion Theory of Radiation Trapping", *Proc. 18th Int. Quantum Electron. Conf.* 142-145 (1992).

CONTINENTAL AND NATIONAL REVIEWED CONFERENCES**2025**

NC-59 F. Pasic, M. Hofer, T. Zemen, **A. F. Molisch**, and C. Mecklenbrauker, “Time-Varying Rician K-Factor in Measured Vehicular Channels at cmWave and mmWave Bands”, *Europ. Wireless 25* (2025).

NC-58 M. Hofer, F. Pasic, B. Rainer, J. Blumenstein, A. Prokes, C. Mecklenbrauker, **A. F. Molisch**, and T. Zemen, “Enabling Vehicular mmWave Communication Links Using cmWave Information”, *Europ. Wireless 25* (2025).

2024

NC-57 D. Cassioli, R. Alesi, F. Granelli, and **A. F. Molisch**, “A New Statistical Model of Human-Induced Multipath Dynamics in mmWaves Channels”, *Europ. Wireless 24* (2024).

NC-56 P. Koivumaki, K. Haneda, and **A. F. Molisch**, “On the Use of Adaptive-Density Point Cloud for Site-Specific Ray-Optics Simulations”, *EuCAP 24* (2024).

2021

NC-55 M. Ito, I. Kanno, T. Ohseki, K. Yamazaki, Y. Kishi, T. Choi, and A. F. Molisch, “On Spectral and Energy Efficiency of Semi-Distributed Cell-Free Massive MIMO”, in *IEICE Conferences Archives* (2021).

2020

NC-54 N. Abbasi, A. Hariharan, A. M. Nair, and **A. F. Molisch**, “Channel Measurements and Path Loss Modeling for Indoor THz Communication”, *European Conference on Antennas and Propagation 2020*, (2020).

NC-53 H. Groll, E. Zochmann, M. Hofer, H. Hammoud, S. Sangodoyin, T. Zemen, J. Blumenstein, A. Prokes, **A. F. Molisch**, C. F. Mecklenbrauker, “60 GHz V2I Channel Variability for Different Elevation Angle Switching Strategies”, *European Conference on Antennas and Propagation 2020*, (2020)

2016

NC-52 **A. F. Molisch**, A. Karttunen, R. Wang, C. U. Bas, S. Hur, J. Park, J. Zhang, “Millimeter-Wave Channels in Urban Environments”, *EuCAP 2016*, invited plenary (2016).

NC-51 **A. F. Molisch**, A. Karttunen, C. U. Bas, S. Hur, J. Park, J. Zhang, “Spatially Consistent Pathloss Modeling for Millimeter-Wave Channels in Urban Environments”, *EuCAP 2016*, (2016)

2015

NC-50 S. Hur, Y. J. Cho, T. Kim, J. Park, **A. F. Molisch**, K. Haneda, and M. Peter, “Wideband Spatial Channel Model in an Urban Cellular Environments At 28 GHz”, *EuCAP 2015*, (2015)

NC-49 S. Hur, S. Baek, B. Kim, J. Park, **A. F. Molisch**, K. Haneda, and M. Peter, “28 GHz Channel Modeling Using 3D Ray-Tracing in Urban Environments,” *EuCAP 2015*, (2015).

2014

NC-48 Z. Jiang, **A. F. Molisch**, G. Caire, and Z. Niu, “On the Achievable Rates of FDD MIMO Systems with Spatial Channel Correlation”, *IEEE Int. Conf. Comm. China (ICCC)* (2014).

NC-47 W. Li, T. Zhang, Y. Shen, **A. F. Molisch**, and Q. Zhang, “Robust resource allocation in wireless localization networks”, *IEEE Int. Conf. Comm. China (ICCC)*, (2014).

NC-46 S. Aditya and **A. F. Molisch**, “Multicast Routing with Mutual Information Accumulation”, *IEEE Int. Conf. Comm. China (ICCC)*, (2014).

2013

NC-45 S. Han, C. Yang, and **A. F. Molisch**, “Traffic-aware base station doze in cooperative multicell systems”, *2013 IEEE China Signal and Information Processing (ChinaSIP)*, 394-398 (2013).

NC-44 S. Sangodoyin, S. Niranjayan, and **A. F. Molisch**, “Ultrawideband Near-Ground Outdoor Propagation Channel Measurements and Modeling”, *EuCAP 2013*, 3034 – 3038 (2013).

2012

NC-43 Sangodoyin, J. Salmi, S. Niranjayan, and **A. F. Molisch**, “Real-Time Ultrawideband MIMO Channel Sounding”, *EuCAP 2012*,. 2303-2307, 2012.

NC-42 Z. Li, R. Wang, and **A. F. Molisch**, “Shadowing in Urban Environments with Microcellular or Peer-to-Peer Links”, *EuCAP 2012*, 44-48, 2012.

2010

NC-41 E. Rebeiz, G. Caire, and **A. F. Molisch**, “Dynamic Power and Rate Control for Bluetooth-Like Body-Area Sensor Networks”, *Mobile Health Summit*, Washington, DC, Nov. 2010.

NC-40 **A. F. Molisch**, “MIMO-UWB propagation channels”, *EuCAP 2010*, 2010.

NC-39 J. Salmi, J. Poutanen, K. Haneda, A. Richter, V.-M. Kolmonen, P. Vainikainen, and **A. F. Molisch**, “Incorporating Diffuse Scattering in Geometry-based Stochastic MIMO Channel Models”, *EuCAP 2010*, 2010.

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NC-38 A. Paier, T. Zemen, L. Bernado, G. Matz, J. Karedal, N. Czink, C. Dumard, F. Tufvesson, **A. F. Molisch**, C. F. Mecklenbraeuer, „Non-WSSUS Vehicular Channel Characterization in Highway and Urban Scenarios at 5.2 GHz using the Local Scattering Function “, *2008 International ITG Workshop on Smart Antennas*, 9-15, 2008.

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NC-37 N. Czink, R. Tian, S. Wyne, F. Tufvesson, J. P. Nuutinen, J. Ylitalo, E. Bonek, **A. F. Molisch**, “Tracking Time-Variant Cluster Parameters in MIMO Channel Measurements” *Chinacom 2007*, in press

NC-36 J. Koivunen, P. Almers, V.-M. Kolmonen, J. Salmi, A. Richter, F. Tufvesson, P. Suvikunnas, **A. F. Molisch**, and P. Vainikainen, “Measurement setup for dynamic multilink MIMO measurements at 5.3 GHz”, *Proc. EuCAP07*, invited, 1-6 (2007).

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NC-34 S. Wyne, T. Santos, F. Tufvesson, and **A. F. Molisch**, “Measurement of Small-Scale Fading For Indoor Wireless Sensor Networks, *URSI-AP North American Meeting*, invited paper (2007).

2006

NC-33 W. Malik and **A. F. Molisch**, “Ultrawideband antenna arrays and directional propagation channels”, *Proc. EuCAP06*, invited paper (2006).

NC-32 **A. F. Molisch**, P. Orlik, Z. Sahinoglu, and J. Zhang, “UWB-based sensor networks and the IEEE 802.15.4a standard - a tutorial”, *Chinacomm 2006*, invited paper, (2006).

NC-31 **A. F. Molisch**, N. B. Mehta, H. Zhang, P. Almers, and J. Zhang, “Implementation Aspects of Antenna Selection for MIMO Systems situations” *Chinacomm 2006*, invited paper, (2006).

NC-30 H. Hofstetter, **A. F. Molisch**, and N. Czink, “A twin-cluster MIMO channel model”, *Proc. EuCAP06* (2006).

NC-29 J. Karedal, A. J. Johansson, F. Tufvesson, and **A. F. Molisch**, “Characterization of MIMO Channels for Personal Area Networks at 5 GHz”, *Proc. EUSIPCO 2006*, invited paper.

NC-28 G. Eriksson, F. Tufvesson, and **A. F. Molisch**, "Potential for MIMO systems at 300 MHz – Measurements and Analysis", *Antennas 06, Sweden*.

2005

NC-27 S. Gezici, Z. Sahinoglu, **A. F. Molisch**, H. Kobayashi, and H. V. Poor, "A Two-Step Time of Arrival Estimation Algorithm for Impulse Radio Ultra Wideband Systems", *Proc. EUSIPCO 2005*, (2005)

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NC-26 **A. F. Molisch**, „UWB Wireless Channels - Propagation Aspects and Interplay with System Design”, *Proc. European Microwave Conference 2004*, invited paper, 1101-1104 (2004).

NC-25 **A. F. Molisch**, F. Tufvesson, P. Almers, S. Wyne, and G. Ericsson, “Space-time channel modeling”, ”, *Proc. European Microwave Conference 2004*, invited paper (2004).

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NC-24 H. Hofstetter, **A. F. Molisch**, and M. Steinbauer, „Implementation of a COST259 geometry based stochastic channel model for macro and micro cells“, *Proc. Europ. Personal Mobile Comm. Conf. 2001*, on CD (2001).

NC-23 **A. F. Molisch**, M. Z. Win, and J. H. Winters, “ Space-time-frequency-coding for MIMO-OFDM systems ”, *Proc. Europ. Personal Mobile Comm. Conf. 2001*, on CD (2001).

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NC-22 M. Steinbauer, **A. F. Molisch**, A. Burr, and R. Thomae, „Capacity of MIMO channels based on measurements“, *Proc. Europ. Conf. Wireless Techn.*, Paris, Oct. 2000, 52-55 (2000)

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NC-21 **A.F. Molisch**, J. Laurila, and A. Kuchar, "Geometry-based stochastic model for mobile radio channels with directional component", *Proc. 2nd Intelligent Antenna Symp.*, Univ. Surrey, (1998).

NC-20 N.N. Bezuglov, **A.F. Molisch**, A.N. Klucharev, F. Fuso, and M. Allegrini, "Quantization technique to solve radiation trapping equation in 2-D and 3-D geometries", *Proc. European Conf. Atomic Molecular Physics '98*, 1.12 (1998).

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NC-19 M. Paier, **A.F. Molisch**, and E. Bonek, "Determination of the optimum sampling time in DECT-like systems", *Proc. Europ. Personal and Mobile Comm. Conf '97*, 459-465 (1997).

NC-18 **A.F. Molisch**, M. Paier, and E. Bonek, "Performance of DECT receivers with burst-by-burst adaptive synchronization", *Proc. IRCTR Colloquium Indoor Comm.*, 27-43 (1997).

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NC-17 **A.F. Molisch**, B.P. Oehry, W. Schupita, and G. Magerl, "Optimization of mercury-vapor lasers", *Proc. European Quantum Electronics Conf.*, Hamburg, QTuJ8 (1996).

NC-16 **A.F. Molisch** and E. Bonek, "Computation of the bit error probability of MSK with fractional-bit detection in time-dispersive AWGN fading channels", *Proc. 1996 SNRV and NUTEK Conf. on Radio Sciences and Telecommunications - RVK 96*, Lulea, Schweden, 390-394 (1996).

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NC-15 J. Fuhl and **A.F. Molisch**, "Space domain equalisation for second and third generation mobile radio systems", *Proc. 2. ITG Fachtagung Mobile Kommunikation*, Neu-Ulm 85-92 (1995).

NC-14 **A.F. Molisch**, J. Fuhl, and E. Bonek, "Exact computation of the error floor of DBPSK in two-delay mobile radio channels", *Proc. 2. ITG Fachtagung Mobile Kommunikation*, Neu-Ulm 263-270 (1995).

NC-13 **A.F. Molisch**, J. Fuhl, and E. Bonek, "Pattern distortion of mobile radio base station antennas by antenna masts and roofs", *Proc. 25th Europ. Microwave Conf.* Bologna 71-76 (1995).

NC-12 L. B. Lopes, **A.F. Molisch**, M. Paier, and J. Fuhl, "On the error floor in DECT-like systems", *Proc. Europ. Personal and Mobile Comm. Conf.* Bologna 95, 170-75 (1995).

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NC-10 **A.F. Molisch**, B.P. Oehry, W. Schupita, B. Sumetsberger, und G. Magerl: "Teilchendiffusion und Radiation Trapping in atomaren Dämpfen", *Mauterndorfer Laserseminar* (1994).

NC-09 **A.F. Molisch**, B.P. Oehry, W. Schupita, B. Sumetsberger, und G. Magerl: "Radiation Trapping mit partial frequency redistribution", *Poster bei der Jahrestagung ÖPG Innsbruck* (1994).

NC-08 **A.F. Molisch**, W. Schupita, B.P. Oehry, B. Sumetsberger, and G. Magerl: "Monte Carlo Simulation of Nonlinear Radiation Trapping and Diffusion in 3-level Atoms", *Proc. European Quantum Electronics Conf 94*, 251-253, Amsterdam (1994).

NC-07 B. Sumetsberger, W. Schupita, **A.F. Molisch**, B.P. Oehry, und G. Magerl: "Optimierter Aufbau eines lampengepumpten Thallium-Atomresonanzfilters", *Mauterndorfer Laserseminar* (1994).

1993

NC-06 B. Sumetsberger, W. Schupita, K. Haselsteiner, B.P. Oehry, **A.F. Molisch**, und G. Magerl: "Effiziente elektrodenlose Spektrallampe", *Poster at the Annual Meeting of the Austrian Physical Society 1993* (1993).

NC-05 W. Schupita, B. Sumetsberger, B. P. Oehry, **A.F. Molisch**, and G. Magerl: "Das Thallium Atomresonanzfilter", *Poster at the Annual Meeting of the Austrian Physical Society 1993* (1993).

1992

NC-04 **A.F. Molisch**, B.P. Oehry, und G. Magerl: "Numerische Behandlung von Radiation-Trapping Effekten in atomaren Dämpfen", *Mauterndorfer Laserseminar* (1992).

NC-03 **A.F. Molisch**, B.P. Oehry, W. Schupita, und G. Magerl: "Umfassende Theorie des Radiation Trapping in einfachen Geometrien", *Poster at the Annual Meeting of the Austrian Physical Society 1992* (1992).

NC-02 **A.F. Molisch** and F.J. Seifert: "The Influence of Long Shielding Plates on the Fields in Interdigital Transducers", *Proc. 5th IGTE Symp. on Numerical Field Calculations in Electrical Engineering* 52-58 (1992)

1990

NC-01 **A.F. Molisch** and A.R. Baghai-Wadji: "The Electrostatic Charge Distribution on Two Semi-Infinite Metallic Plates Induced by a Line Charge", *Proc. 4th IGTE Symp. on Numerical Field Calculations in Electrical Engineering* 223-228 (1990).

TUTORIALS AT INTERNATIONAL CONFERENCES**2023**

- T-34 **A. F. Molisch**, “Compute-Caching-Communication Integration for Efficient Delivery of Metaverse Experiences”, tutorial at JCCS 2023, Korea, April 2023.

2022

- T-34 **A. F. Molisch**, J. Llorca, A. M. Tulino, and Y. Cai, “Compute-Caching-Communication Integration for Efficient Delivery of Metaverse Experiences”, tutorial at Globecom 2022, Rio de Janeiro
- T-33 **A. F. Molisch**, D. Burghal, and L. Chu, “Scalable, Accurate, and Privacy-Preserving Localization in B5G Wireless Networks”, tutorial at Globecom 2022, Rio de Janeiro

2020

- T-32 **A. F. Molisch** and N. Abbasi, “Measurements and modeling of mm-wave and THz propagation channels”, tutorial at Globecom 2020, Taipei

2019

- T-31 **A. F. Molisch** and J. Zhang, “Channel Measurement and Modeling for Fifth-Generation (5G) System”, tutorial at ICC 2019, Shanghai.

2018

- T-30 **A. F. Molisch**, R. Hadani, A. Monk, and C. Ibers, “Communication in high-mobility environments”, tutorial at IEEE VTC Fall 2018, Chicago, IL.
- T-29 **A. F. Molisch**, “mm-wave propagation channel measurement and modeling”, half-day tutorial at IEEE ICC 2018, Kansas City, MO

2017

- T-28 **A. F. Molisch**, “mm-wave propagation channel measurement and modeling”, half-day tutorial at Milcom, Baltimore, MA

2009

- T-27 **A. F. Molisch**, N. B. Mehta, and J. Tao, “IMT-Advanced Systems: Enabling Technologies and Standardizations “ Half-day tutorial at ICC, Dresden

2008

- T-26 **A. F. Molisch**, “MIMO systems and spatial channels“
Half-day tutorial at MILCOM, San Diego
- T-25 **A. F. Molisch** and M. Z. Win, “Ultra-wide-bandwidth systems”
Half-day tutorial at MILCOM, San Diego, CA
- T-24 **A. F. Molisch**, “MIMO propagation channels“
Half-day tutorial at URSI General Assembly, Chicago, IL
- T-23 **A. F. Molisch**, “MIMO systems and spatial channels“
Full-day tutorial at IEEE Antennas and Propagation Symposium, San Diego, CA
- T-22 M. Z. Win and **A. F. Molisch**, “Ultra-wide-bandwidth systems”
Half-day tutorial at IEEE International Conference on Communications, Beijing

2007

- T-21 **A. F. Molisch**, “Multiple-antenna systems “
Full-day tutorial at IEEE Antennas and Propagation Symposium, Honolulu, HI

2006

- T-20 **A. F. Molisch**, E. Bonek, and F. Tufvesson, “Measurement and modelling of wireless propagation channels for MIMO and UWB “
Full-day tutorial at joint ACORN-NEWCOM workshop, Vienna

2005

- T-19 **A. F. Molisch**, „Ultrawideband propagation channels“
Half-day tutorial at IEEE International Conference on Ultrawideband, Zurich, Switzerland

2004

- T-18 M. Z. Win and **A. F. Molisch**, "Ultrawideband systems",
Half-day tutorial at IEEE Globecom ,04, Dallas, USA
- T-17 E. Bonek, K. Hugl, **A. F. Molisch**, and W. Weichselberger, „Smart antennas and MIMO systems“
Full-day tutorial at IEEE ICC ,04, Paris, France
- T-16 M. Z. Win and **A. F. Molisch**, "Ultrawideband systems",
Half-day tutorial at IEEE ICC ,04, Paris, France

2003

- T-15 M. Z. Win and **A. F. Molisch**, "Ultrawideband systems",

Half-day tutorial at IEEE Globecom ,03, San Francisco, USA

T-14 **A. F. Molisch**, W. Weichselberger, and E. Bonek, “Spatial channels (including MIMO)“
Half-day tutorial at IEEE WPMC Yokosuka, Japan

T-13 M. Z. Win and **A. F. Molisch**, "Ultrawideband systems",
Half-day tutorial at IEEE Consumer Electronics Conf. Los Angeles ,03, USA

T-12 **A. F. Molisch**, A. Kuchar, J. Laurila, and E. Bonek, “Spatial channels and smart antennas”:
Half-day tutorial at IEEE VTC fall 2003, Orlando, USA

2002

T-11 **A. F. Molisch**, J. Laurila, K. Hugl, and E. Bonek, “MIMO systems”:
Half-day tutorial at IEEE WPMC ,02 Hawaii, USA

T-10 **A. F. Molisch**, A. Kuchar, J. Laurila, and E. Bonek, “Spatial channels and smart antennas”:
Full-day tutorial at IEEE PIMRC 2002, Lisbon, Portugal

T-09 **A. F. Molisch** and H. Asplund, “The COST259 channel model“
Half-day tutorial, COST 273 workshop, Helsinki, Finland

T-08 **A. F. Molisch**, A. Kuchar, J. Laurila, and E. Bonek, “Spatial channels and smart antennas”:
Full-day tutorial at IEEE VTC’02, Birmingham, USA

T-07 **A. F. Molisch**, A. Kuchar, J. Laurila, and E. Bonek, “Spatial channels and smart antennas”:
Half-day tutorial at IEEE ICC’02, New York, USA

2001

T-06 **A. F. Molisch**, A. Kuchar, J. Laurila, and E. Bonek, “Spatial channels and smart antennas”:
Full-day tutorial at IEEE VTC’01, Atlantic City, USA

T-05 **A. F. Molisch**, A. Kuchar, J. Laurila, M. Toeltsch, M. Steinbauer, and E. Bonek,
“Measurement and simulation of spatial mobile radio channels”,
Online Symposium for Electrical Engineers, www.techonline.com

T-04 **A. F. Molisch**, A. Kuchar, J. Laurila, and E. Bonek, “Spatial channels and smart antennas”:
Full-day tutorial at EPMCC, Vienna, Austria

2000

T-03 **A. F. Molisch**, A. Kuchar, J. Laurila, and E. Bonek, ”Smart antennas in mobile
communications”,
Online Symposium for Electrical Engineers, fall 2000, www.techonline.com

T-02 **A. F. Molisch**, A. Kuchar, J. Laurila, and E. Bonek, “Spatial channels and smart antennas”:
Full-day tutorial at IEEE PIMRC 2000, London, UK

1999

T-01 **A. F. Molisch**, A. Kuchar, J. Laurila, and E. Bonek, “Spatial channels and smart antennas”:
Full-day tutorial at IEEE VTC’99, Amsterdam, Netherlands

OTHER CONTRIBUTIONS**Keynotes, invited talks, panel presentations, unreviewed papers,.....****2025**

M-224 **A. F. Molisch**, “Advances in channel sounding for 6G: cell-free massive MIMO and mmWave/THz massive MIMO”, *IEEE IMS Summer School*, June 12, 2025.

M-223 **A. F. Molisch**, “The future of wireless” *High-Profile OVE-TUWien Lecture*, June 11, 2025.

2024

M-222 T. Zemen, J. Gomez-Ponce, A. Chandra, M. Walter, E. Aksoy, R. He, D. Matolak, M. Kim, J. Takada, S. Salous, R. Valenzuela, and **A. F. Molisch**, Site-Specific Radio Channel Representation for 5G and Beyond“, *COST 21020*, TD(24)09016 (2024).

M-221 **A. F. Molisch**, “Pathloss prediction maps - principles, state of the art, and future research directions, *Keynote* at Workshop on Channel knowledge map for environment-aware communications and sensing at ICC 2024, August 7, 2024.

M-220 **A. F. Molisch**, “Delay dispersion in sub-THz propagation channels - measurement and system implications”, SEU Summer School, invited talk, August 2, 2024.

M-219 **A. F. Molisch**, “Delay dispersion in sub-THz propagation channels - measurement and system implications”, *Keynote* at 6G Channel Measurements and Modeling (6GCMM 2024) Workshop, May 31, 2024.

M-218 **A. F. Molisch**, “RadioMaps - when propagation physics meets machine learning“, *Plenary* at the 2024 ICASSP workshop on radio maps, April 15, 2024.

2023

M-217 **A. F. Molisch**, “Components for Beyond-5G physical layer”, 6G Core Networks Technologies Workshop – NIST, Sept 12 2023.

M-216 **A. F. Molisch**, “Evaluation methods and modeling aspects of channels”, South East University Summer School, July 2023.

M-215 **A. F. Molisch**, “Components for Beyond-5G physical and network layers”, *Keynote* at Convergence Future Communication Colloquium, Kyung Hee University, May 2023.

2022

M-214 **A. F. Molisch**, “Propagation channels for 6G and why they matter for signal processing”, *Keynote at IEEE SPAWC*, July 5, 2022.

2021

M-213 **A. F. Molisch**, “Sub-THz Channels and Communications Systems for 6G”, invited talk at BUPT, Dec. 13, 2021.

M-212 **A. F. Molisch**, “Sub-THz Channels and Communications Systems for 6G”, **keynote** at IEEE Globecom 2021, Dec. 9, 2021

M-211 **A. F. Molisch**, “Measurement and modeling of wireless propagation channels between vehicles”, **keynote** at 13th ISAPE, Dec. 3, 2021.

M-210 **A. F. Molisch**, “Recent results in outdoor mm-wave and THz channels”, invited lecture at SouthEast University, Nanjing, China, August 12, 2021.

M-209 **A. F. Molisch**, “Terahertz Communications systems”, invited talk at IWPC workshop “Exploring the 6G Vision and Key Enablers”, July 15th, 2021.

M-208 **A. F. Molisch**, “Evolution to 6G”, contribution to The future of wireless *Panel Discussion* of APSIPA, May 29th 2021.

M-207 **A. F. Molisch**, “Terahertz propagation channels and communications systems - a key component of B5G”, *IEEE Distinguished Lecture – VTS Australia/New Zealand Chapter*, April 20, 2021.

M-206 **A. F. Molisch**, “Joint radar and communications in existing standards”, Contribution to Panel Discussion on Integration Of Radar Sensing And Communications WCNC 21, March 30th 2021.

M-205 **A. F. Molisch**, Measurement and Modeling of Millimeterwave and Terahertz Channel, ICOIN 2021.

M-204 M. Hofer, D. Loeschenbrand_, J. Blumensteiny, H. Groll, S. Zelenbaba, B. Rainer, L. Bernado, J. Vychodil, T. Mikulasek, E. Zochmann, S. Sangodoyin, H. Hammound, B. Schrenk_, A. Prokes, **A. F. Molisch**, C. F. Mecklenbrauker_, and T. Zemen, “Wireless Vehicular Multiband Measurements in Centimeterwave and Millimeterwave Bands”, *CA15104TD(21)14032* Online Meeting February 8 - 9, 2021.

2020

M-203 **A. F. Molisch**, “The convergence of wireless communications with distributed computation and storage”, **keynote** at *Strategy Workshop for 2030 ICT Technology*, Dec. 2020.

- M-202 **A. F. Molisch**, “Sub-terahertz propagation channels and their impact on system design”, invited talk at *6G Industry Forum at Globecom 2020*.
- M-203 **A. F. Molisch**, “V2V Propagation Channels Below and Above 6 GHz,” invited talk at *KICS Workshop on 6G/Unmanned Vehicle Technology: Road Ahead*, Nov. 27th 2020, Korea.
- M-201 **A. F. Molisch**, “Mm-wave and THz channels and systems for high-mobility environments”, **Keynote** at *IEEE Vehicular Techn. Conf. 2020*
- M-200 **A. F. Molisch**, “ToA based localization in multi-path environments”, **Keynote** at *IEEE RFID 2020 Conf.*, Oct. 7th, 2020.
- M-199 **A. F. Molisch**, “Recent results in outdoor mm-wave and THz channels”, **keynote** at *IRACON meeting*, Sept. 14, 2020.
- M-198 **A. F. Molisch** “Network resilience in 5G”, *presentation at panel at ISART*, August 11th, 2020.
- M-197 **A. F. Molisch**, “New results in Terahertz and mmWave propagation channels”, **Keynote** at *IWMTS 2020*, July 3rd 2020.
- M-196 **A. F. Molisch**, “ToA based localization in the presence of blockage and multipath”, **Keynote** at *ICC 2020 Workshop on Advances in Network Localization and Navigation (ANLN)*, June 8th 2020.
- M-195 **A. F. Molisch**, “Channel measurements and modeling for 0.1-0.5 THz”, **Keynote** at *2020 WCNC Workshop on Emerging Terahertz Technology for Future Wireless Systems*, May 28th 2020.
- M-194 N. Abbasi, A. Hariharan, A. M. Nair, A. S. Almaiman, F. B. Rottenberg, A. E. Willner, A. F. Molisch, “Long-Distance Double Directional Channel Measurements for THz Communications”, *GOMACTech-20*, accepted poster. – conference cancelled

2019

- M-194 **A. F. Molisch**, “Recent results in wireless edge caching”, **Keynote** at *the Wireless Edge Intelligence Workshop, IEEE ICC*, Dec. 9th 2019.
- M-193 **A. F. Molisch**, “Caching-enabled Device-to-device Communications for Video Transmission”, **IEEE Distinguished Lecture Tour** at University of British Columbia, Canada, Oct. 18th, 2019.
- M-192 **A. F. Molisch**, “MM-wave propagation channels and their impact on 5G system design”, **IEEE Distinguished Lecture Tour** at University of Victoria, Canada, Oct. 17th, 2019.

- M-191 **A. F. Molisch**, “MM-wave propagation channels and their impact on 5G system design”, *IEEE Distinguished Lecture Tour* at Microsoft, Seattle, Oct. 16th, 2019.
- M-190 H. Groll, E. Zöchmann, M. Hofer, H. Hammoud, S. Sangodoyin, G. Ghiaasi, T. Zemen, J. Blumenstein, A. Prokes, **A. F. Molisch**, C. F. Mecklenbrauker, “60 GHz V2I channel variability for different elevation angle switching strategies”, CA15104 TD(19)11051, Gdansk, Sept. 2019.
- M-189 **A. F. Molisch**, “MM-wave propagation channels and their impact on 5G system design”, invited talk at National Chiao Tung University, Taiwan, May 16th 2019.
- M-188 **A. F. Molisch**, “Caching-enabled Device-to-device Communications for Video Transmission”, invited lecture at University of California at Irvine, April. 19th, 2019.
- M-187 J. Zhang, K. Yang, Y. Huang, M. Shafi, and **A. F. Molisch**, “Millimeter and THz wave for 5G and beyond”, *China Communications* editorial for special issue, **16** (2), iii-vi (2019).
- M-186 **A. F. Molisch**, “5G Wireless for IoT”, invited talk at IoT Workshop, University of Southern California, January 4th 2019.

2018

- M-185 J Zhang, M Shafi, AF Molisch, F Tufvesson, S Wu, K Kitao, “Channel Models and Measurements for 5G”, *Editorial for Feature Topic, IEEE Communications Magazine*, **56** (12), 12-13 (2018).
- M-184 **A. F. Molisch**, “New modulation and multiple access for 5G systems”, *keynote at IEEE Globasip*, November 28th, 2018.
- M-184 **A. F. Molisch**, “Machine learning for wireless propagation channels”, invited talk at *ITU Workshop on Machine Learning for telecommunications*, August 2018.
- M-183 **A. F. Molisch**, “Measurement and modeling of THz propagation channels”, *keynote at “First International Workshop on Mobile Terahertz Systems (IWMTS)”*, 2018.
- M-182 **A. F. Molisch**, “New modulation and multiple access for 5G systems”, *Heinrich Hertz Institute, Berlin*, invited, June 27th, 2018
- M-181 **A. F. Molisch**, “Mm-wave channel measurements – recent results”, *Lund University*, invited, June 19th, 2018.
- M-180 **A. F. Molisch**, “New modulation and multiple access for 5G systems”, *IEEE Distinguished Lecturer Tour, Shenzhen*, May 17th, 2018
- M-179 **A. F. Molisch**, “New modulation and multiple access for 5G systems”, *Huawei STW*, May 16th, 2018

M-178 **A. F. Molisch**, “New modulation and multiple access for 5G systems”, *IEEE Distinguished Lecturer Tour*, Shanghai, May 14th, 2018

M-177 **A. F. Molisch**, “New modulation and multiple access for 5G systems”, *IEEE Distinguished Lecturer Tour*, Beijing, (BUPT), May 10th, 2018

M-176 **A. F. Molisch**, “New modulation and multiple access for 5G systems”, *IEEE Distinguished Lecturer Tour*, Beijing (Tsinghua Univ.), May 10th, 2018

M-175 **A. F. Molisch**, “New modulation and multiple access for 5G systems”, *IEEE Distinguished Lecturer Tour*, Yokusuka, May 8th, 2018

M-174 **A. F. Molisch**, “New modulation and multiple access for 5G systems”, *IEEE Distinguished Lecturer Tour*, Tokyo, May 7th, 2018

2017

M-173 **A. F. Molisch**, “Wireless communications in high-mobility environments”, *keynote IEEE Wireless Communications and signal processing conf. (WCSP)*, October 2017.

M-172 **A. F. Molisch**, “Modulation and multiple access for high-speed train communications”, *Chinese Research Center for Railway Safety and Control, Beijing, China*, invited, July 3rd, 2017.

M-171 **A. F. Molisch**, “High-Frequency Wireless Propagation Channels - From mm-Wave to THz”, *MARIE DFG Meeting, Darmstadt*, invited keynote (2017).

M-170 **A. F. Molisch**, A. Karttunen, S. Hur, J. Park, J. Zhang, “Street-by-street pathloss modeling for urban microcells at mm-wave frequencies”, *IEEE Communication Theory Workshop 2017*.

M-169 **A. F. Molisch**, “Channel Modeling for 5G mmW Systems,” *International Microwave Symposium 5G Summit*, invited talk, 2017

M-168 **A. F. Molisch**, “On pathloss estimation and modeling in wireless communications”, invited talk, January 2017.

2016

M-167 **A. F. Molisch**, Mm-wave channel measurements, Talk at 5G Silicon Valley summit, November 2016

M-166 **A. F. Molisch**, Mm-wave channel measurements, Talk at 5G Silicon Valley summit, November 2016
Talk at NIST, June

M-165 **A. F. Molisch**, “Channels and systems for wireless communications in high-mobility environments”, *keynote at IEEE VTC Fall 2016*, Sept. 20th 2016, Montreal, Canada.

2015

M-164 **A. F. Molisch**, “Hybrid Transceivers for Massive MIMO – Some Recent Results”, *Keynote at IEEE Globecom workshop on 5G technology*, Dec. 10, 2015, San Diego, CA, USA.

M-163 **A. F. Molisch**, “Millimeter-wave propagation channels for small cells”, *keynote at IEEE Globecom Workshop on Heterogeneous Networks*, Dec. 6, 2015, San Diego, CA, USA.

M-162 **A. F. Molisch**, “Channel Models and Algorithms for Massive MIMO”, lecture at Harbin Institute of Technology, , 2nd Nov. 2015 Shenzhen, China.

M-161 **A. F. Molisch**, “Higher, denser, wilder: the road to 5G”, *Plenary talk at IEEE ICC 2015*, 2nd Nov. 2015 Shenzhen, China.

M-160 **A. F. Molisch**, “Channel Models and Algorithms for Massive MIMO”, *IEEE Distinguished Lecture*, University of Edinburgh, 23rd June 2015, Edinburgh, UK.

M-159 **A. F. Molisch**, “Femto-caching and device-to-device collaboration for wireless video networks”, *IEEE Distinguished Lecture*, York University, 22nd June 2015, York, UK.

M-158 **A. F. Molisch**, “Femto-caching and device-to-device collaboration for wireless video networks”, *IEEE Distinguished Lecture*, King’s College London, 19th June 2015, London, UK.

M-157 **A. F. Molisch**, “Channel Models and Algorithms for Massive MIMO”, *IEEE Distinguished Lecture*, Bristol University, 17th June 2015, Bristol, UK.

M-156 **A. F. Molisch**, “Femto-caching and device-to-device collaboration for wireless video networks”, *Keynote at the IEEE ICC Workshop on heterogeneous cells “Smallcell”*, June 8th 2015, London, UK.

M-155 **A. F. Molisch**, “Propagation channel models for next-generation wireless communications systems”, talk at 10th Tsinghua-USC meeting, 21 May 2015, Beijing, China.

M-154 **A. F. Molisch**, “Femto-caching and device-to-device collaboration for wireless video networks”, invited talk at Beihang University, 19th May 2015, Beijing, China.

M-153 **A. F. Molisch**, “Towards 5G wireless communications: does the PHY layer still has a role to play?”, invited talk at Beijing Jiaotong University, 18th May 2015, Beijing, China, 2015

- M-152 **A. F. Molisch**, “Propagation channel models for next-generation wireless communications systems”, invited talk at the 34th WWRF meeting, 24th April 2015, San Jose, CA, USA
- M-151 **A. F. Molisch**, Precision Localization of Multiple Passive Targets by Ultrawideband Signals in the Presence of Severe Multipath”, invited talk at the 2nd SIEPC, 28th April 2015, Riyadh, Saudi Arabia.
- M-150 **A. F. Molisch**, “Channel measurements for massive MIMO”, invited talk at 2nd Brooklyn 5G Summit, 6th April 2015, New York, NY, USA.

2014

- M-149 **A. F. Molisch**, “Algorithms for FDD-based Massive MIMO”, talk at Lund University, 18th Dec. 2014, Lund, Sweden.
- M-148 **A. F. Molisch**, “Channel Models and Algorithms for Massive MIMO”, talk at Samsung Research, 12th Dec. 2014, Richardson, TX, USA.
- M-147 **A. F. Molisch**, “Multipath in localization systems: friend or foe?”, talk at Purdue University, Oct. 2014, Lafayette, IN, USA
- M-146 M. Segura, S. Niranjayan, P. L. Hsu, **A. F. Molisch**, and H. Hashemi, “Experimental Demonstration of Nanosecond-Accuracy Wireless Network Synchronization”, Poster at MHI Research Festival, University of Southern California, Nov. 2014, Los Angeles, CA, USA
- M-145 **A. F. Molisch**, “Channel Models and Algorithms for Massive MIMO”, talk at Tsinghua Univ., Oct. 2014, Beijing, China.
- M-144 **A. F. Molisch**, “Measuring and modeling of 3D MIMO channels”, talk at Panel on 3D-MIMO at IEEE ICC, Oct. 2014, Shanghai, China.
- M-143 **A. F. Molisch**, G. Caire, M. Chiang, and T. S. Rappaport, “Higher, Denser, Wilder – Research on 5G”, Intel Workshop on 5G, Sept. 2014, Santa Clara, CA, USA
- M-142 **A. F. Molisch**, “Distributed Storage and Control”, Introduction to the invited session at the IEEE Communication Theory Workshop, May 2014, Curacao.
- M-141 **A. F. Molisch**, “Localization in Multipath and Interference”, talk at Lund University, May 2014, Lund, Sweden.
- M-140 M. Zhu, J. Vieira, Y. Kuang, **A. F. Molisch**, and F. Tufvesson, “Tracking and positioning using phase information of multi-path components from measured radio channels”, COST IC 1004, Krakow, TD(14)11037 (2014).

- M-139 **A. F. Molisch** and F. Tufvesson, “Propagation channel models for next-generation wireless communications systems”, COST IC 1004, Aalborg, TD(14)10071 (2014).
- M-138 **A. F. Molisch**, “Multipath in localization systems: friend or foe?”, *keynote at IEEE ICC Workshop in Advances in Network Localization and Navigation*, June 14, 2014, Sydney, Australia).
- M-137 **A. F. Molisch**, “Device-to-device Communications”, Talk at Intel/Cisco/Verizon, 22nd Jan 2014, Malpitas, CA

2013

- M-136 G. Caire, **A. F. Molisch**, and M. J. Neely, “Video Caching and D2D Networks”, IEEE COMSOC MMTC E-Letter, Sept. 2013
- M-135 L. Hanzo, **A. F. Molisch**, and R. Vida, “IEEE ICC 2013 concludes with thousands of international communications experts attending hundreds of presentations in Budapest, Hungary”, IEEE Communications Magazine, vol. 51, issue 8, 14-18 (2013).
- M-134 **A. F. Molisch**, “Ultrawideband Localization and Radar”, *IEEE Distinguished Lecture* at University of Manitoba, Canada, 18th July 2013.
- M-133 **A. F. Molisch**, “Cooperative Communications for Cellular and Ad-hoc Networks”, *IEEE Distinguished Lecture* at University of Florence, 30th June 2013.
- M-132 **A. F. Molisch**, “MIMO systems and propagation channels”, *IEEE Distinguished Lecture* at University of Padova, 24th June 2013.
- M-131 **A. F. Molisch**, “Ultrawideband Localization and Radar”, *IEEE Distinguished Lecture* at University of Rome La Sapienza, 18th June 2013.
- M-130 **A. F. Molisch**, “Cooperation techniques in ad-hoc and infrastructure-based wireless networks” Lecture at TU Ilmenau, 23rd May 2013.
- M-129 **A. F. Molisch**, “Ultrawideband propagation channels and their impact on TOA-based geolocation systems”, 16th March 2013.

2012

- M-128 Z. Niu, **A. F. Molisch**, and J. Zhang, “Guest Editorial: Selected Papers from IEEE ICC 2012”, China Communications, **10**, vii-viii (2012).
- M-127 K. Haneda, A. Richter, and **A. F. Molisch**, “Modeling the Frequency Dependence of Ultrawideband Spatio-Temporal Indoor Radio Channels”, *IC1004 TD(12)03035*

2011

- M-126 M. Paetzold, **A. F. Molisch**, and C. Oestges, “Trends in Mobile Radio Channels-Modeling, Analysis, and Simulation [From the Guest Editors]”, *IEEE Vehicular Technology Magazine* **6**, issue 2, 21-22 (2011).
- M-125 **A. F. Molisch**, “Using Cellphones as Video Repositories for the Cloud”, Talk at Intel VAWN meeting, Oct. 20th 2011
- M-124 **A. F. Molisch**, “Distributed MIMO Systems”, *Keynote at IEEE ICC Distributed Antenna Workshop*, Dec. 5th 2011.
- M-123 **A. F. Molisch**, “Wireless propagation channels and their impact on system design”, Keynote at 2nd World Congress on Computer Science and Information Engineering (CSIE 2011), Changchun, China, June 18th 2011.
- M-122 **A. F. Molisch**, “Propagation Aspects of car-to-car communications,” Lecture for IEEE Beijing Chapter, Beihang University, June 13th, 2011
- M-121 **A. F. Molisch**, “Ultrawideband Localization and Radar”, Lecture at TU Vienna, Austria, May 22nd, 2011
- M-120 **A. F. Molisch**, J. Karedal, F. Tufvesson, T. Abbas, A. Paier, C.Mecklenbrauker, L.Bernado, “Propagation Aspects of car-to-car communications,” IEEE RWS Workshop on vehicle-to-vehicle communications, Phoenix, AZ, Jan 15th, 2011.

2010

- M-119 **A. F. Molisch**, “Propagation Aspects of car-to-car communications,” iCore Seminar Series, University of Alberta, Edmonton, Alberta, Canada, USA
- M-118 **A. F. Molisch**, Cross-layer Design in Collaborative Wireless Ad-hoc Networks, Christian Doppler Labor Meeting, 21. June, 2010
- M-117 **A. F. Molisch**, Antenna selection in MIMO systems, FTW Telekommunikationsforum, 18. June, 2010.
- M-116 J. Salmi, S. Sangodoyin, and **A. F. Molisch**, “High Resolution Parameter Estimation for Ultra-Wideband MIMO Radar”, COST 2100 meeting, Bologna, Italy, Nov. 2010.
- M-115 **A. F. Molisch**, “Wireless Technology for Healthcare”, Caltech, Pasadena, CA, USA, Nov. 12th, 2010.

- M-114 M. Zhu, F. Tufvesson, S. Wyne, G. Eriksson, and **A. F. Molisch**, “Parameterization of 300 MHz MIMO Measurements in Suburban Environments for the COST 2100 MIMO Channel Model”, TD(10)11071, 2010.
- M-113 **A. F. Molisch**, “Ultrawideband (UWB) communications and ranging for sensor networks”, *IEEE Distinguished Lecture Series*, HongKong University, April 13 2010.
- M-112 **A. F. Molisch**, “Cooperation techniques in ad-hoc and infrastructure-based wireless networks”, *Keynote at 2010 International Conference on Communications and Mobile Computing (CMC 2010)*.
- M-111 J. Salmi, J. Poutanen, K. Haneda, A. Richter, V.-M. Kolmonen, P. Vainikainen, and **A. F. Molisch**, “Incorporating Diffuse Scattering in Geometry-based Stochastic MIMO Channel Models”, COST 2100 TD(10)10047, 2010.
- M-110 **A. F. Molisch**, “Spatial channels and MIMO systems”, lecture series at Beihang University, Beijing, China, January 4-6, 2010.
- 2009**
- M-109 **A. F. Molisch**, “Ultrawideband radio for short-range communications and localization”, Invited lecture at the Inauguration of the Center for Short-Range Radio, University of Twente, Netherlands, December 17th, 2009.
- M-108 **A. F. Molisch**, “Base Station Cooperation”, lecture at opening of Christian Doppler laboratory, Vienna, Austria, October 13th, 2009
- M-107 **A. F. Molisch**, “Cross-layer optimization of wireless collaborative ad-hoc networks”, lecture at Communications Colloquium, Vienna, Austria, October 13th, 2009.
- M-106 G. Caire, **A. F. Molisch**, E. Rebeiz, and S. Sreekanta, “Cognitive Medical Environment”, Body Computing Conference, Los Angeles, CA, September 8th, 2009.
- M-105 **A. F. Molisch**, “Multi-user MIMO and Base Station cooperation”, *keynote at Wireless Personal Multimedia Communications Symposium (WPMC)*, Sendai, Japan, September 8th, 2009.
- M-104 G. Caire, G. Kramer, and **A. F. Molisch**, “Relaying and cooperation – recent results and suggestions for future work”, Lecture at Intel Research, San Jose, CA, May 13th, 2009.
- M-103 **A. F. Molisch**, “Cross-layer optimization of wireless collaborative ad-hoc networks”, Lecture at Jiaotong University, Shanghai, China, May 2009.
- M-102 **A. F. Molisch**, “Cross-layer optimization of wireless collaborative ad-hoc networks”, Lecture at Zhejiang University, Hangzhou, China, May 2009.

M-101 **A. F. Molisch**, “Distributed MIMO Systems and Base Station Cooperation”, Lecture at Beihan University and Beijing IEEE ComSoc Chapter, Beijing, China, May 2009.

M-100 **A. F. Molisch**, “Sensor Networks for energy-saving applications: physical-layer and cross-layer aspects”, Lecture at Tsinghua University, Beijing, China, May 21st, 2009.

M-99 X. Shen, **A. F. Molisch**, Z. Niu, and H. Zhang, “Selected papers from Chinacom'06”, *Springer Wireless Networks*, 15, 419-421 (2009).

2008

M-98 **A. F. Molisch**, “UWB for sensor networks “, *IEEE Distinguished Lecture*, Singapore, Nov. 27th 2008.

M-97 **A. F. Molisch**, “Cross-Layer Optimization of Wireless Collaborative Ad-hoc Networks”, *IEEE Distinguished Lecture*, Ho-Chi-Minh City, Vietnam, November 21st 2008.

M-96 C. F. Mecklenbraeuer, A. Paier, T. Zemen, G. Matz, and **A. F. Molisch**, „On the Temporal Evolution of Signal Subspaces in Vehicular MIMO Channels in the 5 GHz Band”, *COST 2100 TD(08)631*, 2008.

M-95 A. Paier, J. Karedal, T. Zemen, N. Czink, C. Dumard, F. Tufvesson, C. Mecklenbraeuer, and **A. F. Molisch**, “Description of Vehicle-to-Vehicle and Vehicle-to-Infrastructure Radio Channel Measurements at 5.2GHz”, *COST 2100 TD(08)636*, 2008.

M-94 F. Harryson, J. Medbo, and **A. F. Molisch**, “Indoor Performance of a MIMO Terminal Including User Inuence by Comparing a Composite Channel Method with Direct Measurements”, *COST 2100 TD(08)661*, 2008.

M-93 **A. F. Molisch**, “UWB for sensor networks “, Lecture at Beijing University of Post and Telecomm, Beijing, China, May 27th, 2008.

M-92 **A. F. Molisch**, “Cross-Layer Optimization of Wireless Collaborative Ad-hoc Networks”, *IEEE Distinguished Lecture*, Beihan University, Beijing, China, May 23rd, 2008.

M-91 **A. F. Molisch**, “Cross-Layer Optimization of Wireless Collaborative Ad-hoc Networks”, Lecture at Boston University, Boston, MA, USA, April 25th, 2008.

M-90 **A. F. Molisch**, “Cross-layer Design in Collaborative Wireless Ad-hoc Networks”, *IEEE Distinguished Lecture*, Ames, IA, USA, March 24th 2008.

M-89 **A. F. Molisch**, “UWB for sensor networks “, *IEEE Distinguished Lecture*, Rochester, MN, USA, March 24th 2008.

- M-88 J. Karedal, F. Tufvesson, **A. F. Molisch**, N. Czink, A. Paier, C. F. Mecklenbraeuer, C. Dumard and T. Zemen, “Geometry-Based Stochastic Channel Modeling of a Vehicle-to-Vehicle Radio Channel”, COST 2100 TD(08) 473, 2007.
- M-87 A. Richter, F. Tufvesson, P. Salvo Rossi, K. Haneda, J. Koivunen, V.-M. Kolmonen, J. Salmi, P. Almers, P. Hammarberg, K. Pölonen, P. Suvikunnas, **A. F. Molisch**, O. Edfors, V. Koivunen, P. Vainikainen, and R. R. Mueller, “Wireless LANs with High Throughput in Interference-Limited Environments – Project Summary and Outcomes”, COST 2100 TD(08) 432, 2008.

2007

- M-86 **A. F. Molisch**, „MIMO antennas, propagation channels, and their impact on system design”, *keynote at IEEE ISWCS*, Trondheim, Norway, Oct. 18th 2007.
- M-85 C. F. Mecklenbräuer, A. Paier, J. Karedal, N. Czink, H. Hofstetter, C. Dumard, T. Zemen, F. Tufvesson, **A. F. Molisch**, „Challenges in vehicular communications for impactive systems - Dynamics, Doppler, and Delay“, JWCC 2007, Oct. 16th 2007.
- M-84 **A. F. Molisch**, „Cooperative communications for ultrareliable wireless systems“, invited talk at Chinacom 2007, August 22nd, 2007
- M-83 **A. F. Molisch**, “UWB channels and their interaction with system design”, lecture at Shanghai Jiatong University, Shanghai, China, August 21st, 2007.
- M-82 A. F. Molisch, “Antenna Selection and RF Processing for MIMO Systems”, lecture at Shanghai Jiatong University, Shanghai, China, August 21st, 2007.
- M-81 **A. F. Molisch**, „Low-data-rate UWB communications – the theory of making it practical“, *IEEE Communication Theory Workshop 2007*
- M-80 N. Devroye, N. B. Mehta, and **A. F. Molisch**, „Asymmetric Cooperation Among Relays with Linear Precoding“, *IEEE Communication Theory Workshop 2007*.

2006

- M-79 **A. F. Molisch**, “Cross-layer Design in Collaborative Wireless Ad-hoc Networks”, lecture at University of Connecticut, Storrs, CT, Nov. 3rd, 2006.
- M-78 **A. F. Molisch**, “Antenna Selection and RF Processing for MIMO Systems”, lecture at Boston University, Boston, MA, Oct. 1st, 2006.
- M-77 **A. F. Molisch**, “UWB communication systems for sensor networks”, lecture at Yale University, New Haven, CT, Sept. 13th, 2006.

- M-76 **A. F. Molisch**, “UWB channels and their interaction with system design”, lecture at Tsinghua University, Beijing, June 23rd, 2006.
- M-75 **A. F. Molisch**, “Antenna Selection and RF Processing for MIMO Systems”, lecture at Tsinghua University, Beijing, June 23rd, 2006.
- M-74 **A. F. Molisch**, “UWB channels and their interaction with system design”, lecture at MIT, Boston, MA, April 20th, 2006.
- M-73 **A. F. Molisch**, “UWB for sensor networks – the 802.15.4a standard”, lecture at Center of Excellence for Embedded Wireless Systems, University of L’Aquila, Italy, March 30th 2006.
- M-72 **A. F. Molisch**, “UWB for sensor networks – the 802.15.4a standard”, *keynote at the UBC-IEEE Workshop on Future Wireless Systems*, Vancouver, March 10th 2006.
- M-71 **A. F. Molisch**, “Antenna Selection and RF Processing for MIMO Systems”, lecture at University of Toronto, Feb. 03rd 2006.
- M-70 **A. F. Molisch**, “UWB for sensor networks – the IEEE 802.15.4a standard”, lecture at University of Waterloo, Feb. 02^{nc} 2006.

2005

- M-69 **A. F. Molisch**, “Antenna Selection and RF Processing for MIMO Systems”, lecture at Technical University Vienna, Dec. 22^{nc} 2005.
- M-68 **A. F. Molisch**, “Antenna Selection and RF Processing for MIMO Systems”, lecture at University of Southern California, Nov. 9th 2005.

2004

- M-67 B. K. Lau, J. B. Andersen, G. Kristensen, and **A. F. Molisch**, “On impedance matching and bandwidth of compact antenna arrays”, COST 273, TD 05(097), Lisbon, 2005.
- M-66 S. Wyne, P. Almers, B. K. Lau, G Eriksson, J. Karedal, F. Tufvesson, and **A. F. Molisch**, “Why the channel matrix in a LOS scenario has zero mean entries”, COST 273, TD 04 (192), 2004.
- M-65 **A. F. Molisch**, „Ultrawideband systems,“ lecture at TU Vienna, Dec. 22nd, 2004.
- M-64 **A. F. Molisch** and F. Tufvesson, Ultra-Wideband Communications using Hybrid Matched Filter Correlation Receivers , COST 273 TD 04-092.
- M-63 J. S. Yedidia, K. Pedagani, and **A. F. Molisch**, “New Spreading Transforms for Fading Channels”, Allerton conference, Sept. 2004.

- M-62 **A. F. Molisch**, Ultrawideband systems, lecture at Ericsson Mobile Platforms, Lund, Sweden, June 18th, 2004.
- M-61 **A. F. Molisch**, Ultrawideband systems, lecture at FOI, Linkoping, Sweden, June 16th, 2004.
- M-60 S. Wyne, P. Almers, G Eriksson, J. Karedal, F. Tufvesson, A. Wern, B. Manderson, and **A. F. Molisch**, “Outdoor to Indoor Office MIMO Measurements at 5.2 GHz”, COST 273, TD 04 (152), 2004.
- M-59 **A. F. Molisch**, UWB channel measurement and modeling, full-day lecture at Oulu University, June 14th, 2004.
- M-58 **A. F. Molisch**, “MIMO propagation channels: physics and interaction with communication theory“, Communication Theory Workshop, June 2004, Capri, Italy.

2003

- M-57 **A. F. Molisch**, “Recent results in MIMO channel measurement and modeling”, invited talk at MIT, Dec.. 10th 2003.
- M-56 **A. F. Molisch**, “The keyhole effect: theory and measurements”, invited talk at Stanford University, Dec.. 5th 2003.
- M-55 **A.F. Molisch**, “Recent results in MIMO channel measurement and modeling”, invited talk at Harvard University, Oct. 10th 2003.
- M-54 P. Almers, F. Tufvesson, and **A. F. Molisch**, “On keyholes”, Communication Theory Workshop, Phoenix, Arizona, April 8th, 2003.

2002

- M-53 **A. F. Molisch**, “UWB Propagation channels”, lecture at the KETI seminar on UWB technology, Seoul, Korea, Dec. 19th, 2002.
- M-52 **A. F. Molisch**, “Ultrawideband channels”, KETI Seminar on UWB Past Present and Future, Seoul, Korea, Dec. 16th 2002.
- M-51 **A.F. Molisch**, “Double-directional channels and MIMO systems”, lecture at Ericsson Mobile Phone Platforms, Nov. 29th 2002.
- M-50 **A. F. Molisch**, “Directional channels: new challenges for measurement and modeling”, contribution for panel on smart antennas and MIMO at WPMC 2002, Oct. 28th, 2002.
- M-49 **A. F. Molisch**, “A Generic Model for MIMO wireless propagation channels”, COST273 TD

02-100, 2002.

- M-48 **A.F. Molisch**, “MIMO systems and double-directional channels”, lecture at KTH Stockholm, Oct. 14th 2002.
- M-47 **A.F. Molisch**, “MIMO systems and double-directional channels”, lecture at Ericsson Radio Systems, Stockholm,, Oct. 13th 2002.
- M-46 **A.F. Molisch**, “Double-directional channels and MIMO systems”, lecture at University of Minnesota at Minneapolis, April 25th 2002.
- M-45 **A.F. Molisch**, “Double-directional channels and MIMO systems”, lecture at L3 communications, Salt Lake City, Utah March 5th 2002.
- M-44 **A.F. Molisch**, “Double-directional channels and MIMO systems”, lecture at NorthWestern University, Feb.. 14th 2002.
- M-43 **A.F. Molisch** and H. Asplund, “The COST259 directional channel model”, tutorial to the 3GPP ad-hoc group on MIMO channel modeling, January 2002.

2001

- M-42 **A. F. Molisch**, “Spatial channels and MIMO systems”, lecture at the Lund/Ronneby seminar on smart antennas, Nov. 20 2001.
- M-41 **A.F. Molisch** “The COST259 directional channel model”, lecture at Lucent BellLabs, May 30, 2001.
- M-40 **A. F. Molisch**, “Spatial channels and MIMO systems”, lecture at University of Erlangen-Nuernberg, Feb. 28 2001.

2000

- M-39 **A. F. Molisch** “Spatial channel measurement and modelling”, lecture at Ericsson Research, Stockholm, Dec. 19. 2000.
- M-38 **A. F. Molisch**, “Some aspects of MIMO systems”, lecture at AT&T Labs Research, Red Bank, Sept. 15 2000.
- M-37 **A. F. Molisch** “Spatial channel measurement and modelling”, lecture at Bell Labs, Holmdel, Sept. 13. 2000.
- M-36 M. Steinbauer, J. E. Dietert, T. Engler, R. Heddergott, R. Kattenbach, J. Medbo, and **A. F. Molisch**, “Modeling Unification Workshop II (on Micro and pico cells) “, COST 259 TD00(35) (2000).

- M-35 **A. F. Molisch** "Spatial channel measurement and modelling", lecture at AT&T Labs - Research, Red Bank, Aug. 23. 2000.
- M-34 **A. F. Molisch**, "Messung und Modellierung räumlicher Mobilfunkkanäle", lecture at the Universität Saarbrücken, June 9. 2000.
- M-33 **A. F. Molisch**, "Intelligente Antennen und räumliche Kanalmodelle", Vortrag an der Technischen Universität Graz, May 15 2000 (2000).

1999

- M-32 **A. F. Molisch** "Spatial channel measurement and modelling", lecture at the Royal Institute of Techn., Stockholm, Sweden, Nov. 17 1999
- M-31 **A. F. Molisch**, "Wireless wideband receivers without equalizers", lecture at the Royal Institute of Techn., Stockholm, Sweden, Nov. 16. 1999
- M-30 **A. F. Molisch**, "Räumliche Kanalmodelle und intelligente Antennen", lecture at the Universität Siegen, April 14. 1999.
- M-29 **A. F. Molisch**, "Breitbandige Empfänger für Mobilfunksysteme ohne Entzerrer", lecture at the Universität Saarbrücken, Germany, Jan 8. 1999.
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STANDARDS SUBMISSIONS TO 3GPP

Some 25 contributions to 3GPP (3G, LTE, and 5G NR); however, this standards organization only lists companies, not specific authors. Therefore contributions are not listed here.

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