

Benjamin Deutschmann
Graz University of Technology
Institute of Communication Networks and Satellite Communications (4400)
Institute of Communication Networks and Satellite Communications (4400)



Employment

Graz University of Technology

Institute of Communication Networks and Satellite Communications (4400)
Graz University of Technology (90000)
Graz, Austria
16 Apr 2024 → present

Graz University of Technology

Institute of Communication Networks and Satellite Communications (4400)
Graz University of Technology (90000)
Graz, Austria
1 Feb 2025 → present

Research outputs

Joint Localization, Synchronization and Mapping via Phase-Coherent Distributed Arrays

Fascista, A., Deutschmann, B. J. B., Keskin, M. F., Wilding, T., Coluccia, A., Witrissal, K., Leitinger, E., Seco-Granados, G. & Wymeersch, H., 23 Jan 2025, In: IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing. PP, 99, p. 1-16 16 p., 10851402.

Single Versus Multi-Tone Wireless Power Transfer with Physically Large Arrays

Van Mulders, J., Deutschmann, B. J. B., Ottoy, G., Strycker, L. D., Perre, L. V. D., Wilding, T. & Callebaut, G., 2 Dec 2024, *Proceedings of the 3rd International Conference on 6G Networking, 6GNet 2024*. IEEE, p. 31-36

Accurate Direct Positioning in Distributed MIMO Using Delay-Doppler Channel Measurements

Deutschmann, B., Nelson, C., Henriksson, M., Marti, G., Kosasih, A., Tervo, N., Leitinger, E. & Tufvesson, F., 7 Oct 2024, *2024 IEEE 25th International Workshop on Signal Processing Advances in Wireless Communications, SPAWC 2024*. IEEE, p. 606-610 5 p. (IEEE Workshop on Signal Processing Advances in Wireless Communications, SPAWC).

Keeping Energy-Neutral Devices Operational: A Coherent Massive Beamforming Approach

Van Mulders, J., Cox, B., Deutschmann, B. J. B., Callebaut, G., De Strycker, L. & Van Der Perre, L., 7 Oct 2024, *2024 IEEE 25th International Workshop on Signal Processing Advances in Wireless Communications, SPAWC 2024*. IEEE, p. 6-10 5 p. (IEEE Workshop on Signal Processing Advances in Wireless Communications, SPAWC).

Distributed MIMO Measurements for Integrated Communication and Sensing in an Industrial Environment

Nelson, C., Li, X., Fedorov, A., Deutschmann, B. & Tufvesson, F., Mar 2024, In: *Sensors*. 24, 5, 1385.

Combined Wideband Channel Estimation and Direct Link Interference Mitigation in Bistatic Backscatter Systems

D'Angelo, L., Deutschmann, B. J. B. & Witrissal, K., 2024, *2024 IEEE 25th International Workshop on Signal Processing Advances in Wireless Communications, SPAWC 2024*. IEEE, p. 506-510 5 p. (IEEE Workshop on Signal Processing Advances in Wireless Communications, SPAWC).

An Open Dataset Storage Standard for 6G Testbeds

Callebaut, G., Sandra, M., Nelson, C., Wilding, T., Delabie, D., Deutschmann, B. J. B., Tärneberg, W., Fitzgerald, E., Johansson, A. J. & Perre, L. V. D., 19 Dec 2023, p. 347-352. 6 p.

Uplink Joint Positioning and Synchronization in Cell-Free Deployments with Radio Stripes

Fascista, A., Deutschmann, B. J. B., Keskin, M. F., Wilding, T., Coluccia, A., Witrissal, K., Leitinger, E., Seco-Granados, G. & Wymeersch, H., 23 Oct 2023, *2023 IEEE International Conference on Communications Workshops: Sustainable Communications for Renaissance, ICC Workshops 2023*. IEEE, p. 1330-1336 7 p.

XL-MIMO Channel Modeling and Prediction for Wireless Power Transfer

Deutschmann, B. J. B., Wilding, T., Graber, M. & Witrissal, K., 23 Oct 2023, *2023 IEEE International Conference on Communications Workshops: Sustainable Communications for Renaissance, ICC Workshops 2023*. IEEE, p. 1355-1361 7 p.

Bistatic MIMO Radar Sensing of Specularly Reflecting Surfaces for Wireless Power Transfer

Deutschmann, B. J. B., Graber, M., Wilding, T. & Witrissal, K., 2 Aug 2023, *ICASSPW 2023 - 2023 IEEE International Conference on Acoustics, Speech and Signal Processing Workshops, Proceedings*. 4 p.

Large Intelligent Surface Measurements for Joint Communication and Sensing

Nelson, C., Li, X., Wilding, T., Deutschmann, B. J. B., Witrissal, K. & Tufvesson, F., 26 Jul 2023, *2023 Joint European Conference on Networks and Communications and 6G Summit, EuCNC/6G Summit 2023*. Curran Associates, Inc, p. 228-233 6 p.

Propagation Modeling for Physically Large Arrays: Measurements and Multipath Component Visibility

Wilding, T., Deutschmann, B. J. B., Nelson, C., Li, X., Tufvesson, F. & Witrissal, K., 26 Jul 2023, *2023 Joint European Conference on Networks and Communications and 6G Summit, EuCNC/6G Summit 2023*. Curran Associates, Inc, p. 204-209 6 p.

Towards sustainable networks

Mesodiakaki, A., Rahman, A., Barrachina, S., Deutschmann, B., Ghafouri, N., Gonzalez, R., Kokkinos, P., Merluzzi, M., Payaró, M., Polyzois, S., Ramantas, K., Scheuven, L., Selva, E., Siracusano, G., Upadhy, K., Van der Perre, L., Vardakas, J., Varvarigos, E., Verikoukis, C. & Wilding, T. & 2 others, Witrissal, K. & Wunderer, S., 6 Jun 2023, *Towards Sustainable and Trustworthy 6G: Challenges, Enablers, and Architectural Design*. Now Publishers Inc, p. 233-269 37 p.

Location-based Initial Access for Wireless Power Transfer with Physically Large Arrays

Deutschmann, B. J. B., Wilding, T., Larsson, E. G. & Witrissal, K., May 2022, *2022 IEEE International Conference on Communications Workshops (ICC Workshops)*. p. 127-132 6 p.

Analytical Performance Metrics and Physical-Layer Solutions

Behmanesh, B., Deutschmann, B., Edfors, O., Frenger, P., Ganesan, U. K., Helmersson, K. W., Larsson, E. G., Liu, L., Pollin, S., Ranjbar, V., Rimalapudi, S., Rivas, J. F. E., Shaik, Z. H., Viera, J., Wilding, T. & Witrissal, K., 1 Jan 2022, Zenodo.

Initial assessment of architectures and hardware resources for a RadioWeaves infrastructure

Edfors, O., Brazil, R., Petautschnig, H., Callebaut, G., Feys, T., Perre, L. V. D., Larsson, E. G., Edfors, O., Fitzgerald, E., Liu, L., Sanchez, J. R., Tärneberg, W., Frenger, P., Deutschmann, B., Wilding, T. & Witrissal, K., 1 Jan 2022, Zenodo.

HF RFID Tag Chip Impedance Measurements

Grosinger, J., Deutschmann, B. J. B., Zoscher, L., Gadringer, M. & Amtmann, F., 2022, In: *IEEE Transactions on Instrumentation and Measurement*. 71, 2000911 .

Use case-driven specifications and technical requirements and initial channel model

Truskaller, M., Fabrete, L., Stanek, A., Delabie, D., Perre, L. V. D., Larsson, E. G., Rimalapudi, S., Fitzgerald, E., Tufvesson, F., Edfors, O., Reial, A., Deutschmann, B., Witrissal, K., Wilding, T., Vandeweerd, I., Borrmann, M., Mühlmann, U. & Esteban, J. F., 1 Oct 2021, Zenodo.

Calibration Method for an RF I-V Based HF RFID Impedance Measurement System

Deutschmann, B. J. B., Gadringer, M., Fischbacher, R., Görtschacher, L., Amtmann, F., Merlin, E., Muehlmann, U. & Grosinger, J., 2021, *97th ARFTG Microwave Measurement Conference: Conducted and Ota Measurement Challenges for Urban, Rural and SatComm Connectivity, ARFTG 2021*. IEEE, p. 1-4 4 p. 9639935

Efficient Assessment of the Impact of Metallic Obstacles on the Wireless Power Transfer in Loosely Coupled Links
Deutschmann, B., Görtschacher, L. J. & Grosinger, J., 2019, *Proceedings of the European Microwave Conference 2019*.
IEEE, p. 579-582

Activities

The Potential of Physically Large Apertures for 6G

Deutschmann, B. (Speaker)
14 Nov 2023

Lund University

Deutschmann, B. (Visitor)
8 Nov 2023 → 24 Nov 2023

IEEE Standards Association (External organisation)

Deutschmann, B. (Chair)
30 May 2023 → 31 Dec 2027

IEEE SA Synthetic Aperture Mini-Workshop

Deutschmann, B. (Speaker), Wilding, T. (Contributor) & Witrisal, K. (Contributor)
19 Oct 2022

RadioWeaves: Digitalization Use Cases Demanding a New 6G Wireless Infrastructure

Deutschmann, B. (Speaker), Witrisal, K. (Contributor) & Wilding, T. (Contributor)
21 Sept 2022

Online: Scientific Writing: From a Blank Page to the Finished Paper without Burning Out in the Process

Jauk, B. (Participant), Deutschmann, B. (Participant) & Machado Charry, F. E. (Participant)
26 Nov 2020 → 27 Nov 2020