Exhaustive Publication List

Sebastian Semper

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Peer-Reviewed Publications

[1] J. Bang, S. Berweger, J. Chuang, C. Gentile, N. Golmie, and S. Semper. "Real-Time 141 GHz JCAS Channel Sounder: Near-Field Switched Beamforming, Carrier Multiplexing, and Context Awareness". In: *IEEE Transactions on Microwave Theory and Techniques* (2025), pp. 1–14. DOI: 10.1109/tmtt.2025.3529345.

[2] A. Elgamal, P. Knott, T. Dallmann, and S. Semper. "Multi-Bistatic Coordinated Multipoint JCAS: Exploring the Synchronization Requirements". In: *2025 IEEE 5th International Symposium on Joint Communications & Sensing (JC&S)*. Jan. 2025, pp. 1–6. DOI: 10.1109/JCS64661.2025.10880632.

[3] J. Gedschold, D. Dupleich, S. Semper, M. Döbereiner, A. Ebert, G. D. Galdo, and R. S. Thomä. "Metrology of Multicarrier-Based Delay-Doppler Channel Sounding for sub-THz Frequencies". In: *IEEE Open Journal of Antennas and Propagation* (2025), pp. 1–1. DOI: 10.1109/ojap.2025.3566473.

[4] J. Gedschold, S. Semper, A. Ebert, G. Del Galdo, and R. S. Thomä. "Experimental Performance Validation of Fisher Information-Optimized Multicarrier Waveforms for Sub-THz Channel Sounding". In: *2025 19th European Conference on Antennas and Propagation (EuCAP)*. 2025, pp. 1–5. DOI: 10.23919/EuCAP63536.2025.10999680.

[5] M. Miranda, S. Semper, C. Schneider, and R. Thomä. "Model-Based Joint Delay-Doppler Estimation for ICAS with Sparse OFDM Resources". In: *2025 19th European Conference on Antennas and Propagation (EuCAP)*. 2025, pp. 1–5. DOI: 10.23919/EuCAP63536.2025.10999889.

[6] M. Miranda, S. Semper, C. Schneider, R. Thomä, and G. Del Galdo. "Joint Delay-Doppler Estimation Using OFDMA Payloads for Integrated Communications and Sensing". In: *2025 Joint European Conference on Networks and Communications & 6G Summit (EuCNC/6G Summit)*. June 2025, pp. 577–582. DOI: 10.1109/EuCNC/6GSummit63408.2025.11037009.

[7] J. Naviliat, S. Semper, and M. Döbereiner. "Cubic B-Splines for Hardware-Accelerated Antenna Beampattern Interpolation". In: *2025 19th European Conference on Antennas and Propagation (EuCAP)*. 2025, pp. 1–5. DOI: 10.23919/EuCAP63536.2025.10999491.

[8] S. Schieler, S. Semper, C. Schneider, and R. Thomä. "Measurement-Based Evaluation of CNN-Based Detection and Estimation for ISAC Systems". In: *2025 IEEE International Radar Conference (RADAR)*. May 2025, pp. 1–6. DOI: 10.1109/RADAR52380.2025.11031730.

[9] S. Schieler, S. Semper, and R. Thomä. "Wireless Propagation Parameter Estimation with Convolutional Neural Networks". In: *International Journal of Microwave and Wireless Technologies* (Apr. 2025), pp. 1–8. DOI: 10.1017/s1759078725000431.

[10] S. Semper, M. Döbereiner, M. Landmann, J. Gedschold, and R. Thomä. "Estimating Angular Diffuse Components and Model Misspecification in MIMO Channel Sounding". In: *IEEE Transactions on Antennas and Propagation* (2025), pp. 1–1. DOI: 10.1109/TAP.2025.3613529.

[11] S. Semper, G. Sommerkorn, M. Döbereiner, and R. Thomä. *Elowen: MIMO Channel Sounding and Characterization in an Urban Macro Cell*. en. refodat - Repositorium für Forschungsdaten in Thüringen, 2025. DOI: 10.71758/REFODAT.55.

[12] S. N. H. Shah, S. Semper, A. U. Khan, C. Schneider, and J. Robert. "Newtonized Orthogonal Matching Pursuit for High-Resolution Target Detection in Sparse OFDM ISAC Systems". In: *IEEE Transactions on Vehicular Technology* (2025), pp. 1–15. DOI: 10.1109/tvt.2025.3573165.

[13] P. Tosi, S. Schieler, M. Henninger, S. Semper, and S. Mandelli. "Benchmarking CFAR and CNN-Based Peak Detection Algorithms in ISAC Under Hardware Impairments". In: *2025 28th International Workshop on Smart Antennas (WSA)*. Sept. 2025, pp. 1–7. DOI: 10.1109/WSA65299.2025.11202822.

[14] Z. Zhao, C. J. Smeenk, S. Semper, C. Schneider, and R. S. Thomä. "Dual-Band Sensing for Passive Target Surveillance in ISAC Systems". In: *2025 IEEE Wireless Communications and Networking Conference (WCNC)*. Mar. 2025, pp. 1–6. DOI: 10.1109/WCNC61545.2025.10978429.

[15] J. Gedschold, S. Semper, M. Döbereiner, and R. S. Thomä. "Excitation Signal Design for THz Channel Sounding and Propagation Parameter Estimation". In: *2024 18th European Conference on Antennas and Propagation (EuCAP)*. 2024, pp. 1–5. DOI: 10.23919/EuCAP60739.2024.10501423.

[16] M. Miranda, S. Semper, M. Döbereiner, and R. Thomä. "Improving the Spatial Correlation Characteristics of Antenna Arrays using Linear Operators and Wide-band Modelling". In: *2024 27th International Workshop on Smart Antennas (WSA)*. 2024, pp. 1–7. DOI: 10.1109/WSA61681.2024.10511328.

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[19] A. Rashidifar, F. Römer, S. Semper, N. Gutzeit, and G. D. Galdo. "Broadband DRA with Uniform Angular Dependent Delay for Indoor Localization". In: *IEEE Access* (2024), pp. 1–1. DOI: 10.1109/access.2024.3395124.

[20] S. Schieler, S. Semper, R. Faramarzahangari, M. Döbereiner, C. Schneider, and R. Thomä. "Grid-Free Harmonic Retrieval and Model Order Selection Using Convolutional Neural Networks". In: *2024 18th European Conference on Antennas and Propagation (EuCAP)*. 2024, pp. 1–5. DOI: 10.23919/EuCAP60739.2024.10501588.

[21] S. Semper, J. Chuang, S. Berweger, and C. Gentile. "Using Temporal Consistency for Compressed Sensing in High-Resolution mmWave Sounding". In: *ICASSP 2024 - 2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. 2024, pp. 8491–8495. DOI: 10.1109/ICASSP48485.2024.10446447.

[22] S. Semper, J. Naviliat, J. Gedschold, M. Döbereiner, S. Schieler, and R. S. Thomä. "Distributed Computing and Model-Based Estimation for Integrated Communications and Sensing: A Roadmap". In: *IEEE Open Journal of the Communications Society* (2024), pp. 1–1. DOI: 10.1109/ojcoms.2024.3467683.

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[24] J. Gedschold, S. Semper, R. Thomä, M. Döbereiner, and G. Del Galdo. "Dynamic delay-dispersive UWB-Radar Targets: Modeling and Estimation". In: *IEEE Transactions on Antennas and Propagation* (2023), pp. 1–1. DOI: 10.1109/TAP.2023.3287672.

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[30] D. Dupleich, S. Semper, M. D. Al-Dabbagh, A. Ebert, T. Kleine-Ostmann, and R. Thomä. "Verification of THz Channel Sounder and Delay Estimation with Over-The-Air Multipath Artifact". In: *2022 16th European Conference on Antennas and Propagation (EuCAP)*. 2022, pp. 1–5. DOI: 10.23919/EuCAP53622.2022.9769269.

[31] A. Rashidifar, S. Semper, and C. Wagner. "A Frequency Domain Approach for Estimating the Angular Dependent Delay of an UWB Antenna". In: *2022 16th European Conference on Antennas and Propagation (EuCAP)*. 2022, pp. 1–5. DOI: 10.23919/EuCAP53622.2022.9769534.

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Datasets

[1] S. Semper, G. Sommerkorn, M. Döbereiner, and R. Thomä. *Elowen: MIMO Channel Sounding and Characterization in an Urban Macro Cell*. en. refodat - Repositorium für Forschungsdaten in Thüringen, 2025. DOI: 10.71758/REFODAT.55.

Patents

[1] C. Wagner, F. Römer, S. Semper, and G. Del Galdo. "Method for the acquisition of impulse responses, e.g. for ultra-wideband systems (pending)". EP3806413, WO21069513. Oct. 2019.

Preprints

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