

# List of Publications

**Name:** Olav Emerik Tirkkonen

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## A Peer Reviewed Scientific Articles

### A.1 Peer Reviewed Journal Articles

- [1] H. Al-Tous and O. Tirkkonen, "Coverage Area Optimized Static Reflecting Surfaces," *IEEE Trans. Wireless Commun.*, in press.
- [2] M. Amidzadeh, G. Caire and O. Tirkkonen, "Optimal Multicast-Cache-Aided On-demand Streaming in Heterogeneous Wireless Networks via a Path/Surface Following Approach," *IEEE Trans. Wireless Commun.*, in press.
- [3] A. Srinivasan, M. Amidzadeh, J. Zhang, and O. Tirkkonen, "Adaptive Cache Policy Optimization through Deep Reinforcement Learning in Dynamic Cellular Networks," *Intelligent and Converged Networks*, 13 pp., in press.
- [4] P. Kazemi, H. Al-Tous, T. Ponnada, C. Studer, and O. Tirkkonen, "Beam SNR Prediction Using Channel Charting," *IEEE Trans. Vehic. Tech.*, vol. 72, no. 10, pp. 13130–13145, Oct 2023.
- [5] J. Liao, R. Vehkalahti, T. Pllaha, W. Han and O. Tirkkonen, "Modular CSI Quantization for FDD Massive MIMO Communication," *IEEE Trans. Wireless Commun.*, vol. 22, no. 12, pp. 8543–8558, Dec 2023.
- [6] U. Singh, H. Al-Tous, O. Tirkkonen, M. Bhatnagar, "Performance Analysis of the STAR-RIS-Assisted Downlink NOMA Communication System with MRC," *IEEE Commun. Lett.*, vol. 27, no. 7, pp. 1739–1742, July 2023.
- [7] P. Ferrand, M. Guillaud, C. Studer and O. Tirkkonen, "Wireless Channel Charting: Theory, Practice, and Applications", *IEEE Commun. Mag.*, vol. 61, no. 6, pp. 124-130, June 2023.
- [8] N. Malm, K. Ruttik and O. Tirkkonen, "Midhaul Performance Modelling Using Commodity Hardware C-RAN Testbed," *Wireless Personal Commun.*, vol. 131, pp. 1339-1363, May 2023.
- [9] M. Amidzadeh, H. Al-Tous, G. Caire and O. Tirkkonen, "Caching in Cellular Networks Based on Multipoint Multicast Transmissions," *IEEE Trans. Wireless Commun.*, vol. 22, no. 4, pp. 2393-2408, April 2023.
- [10] J. Lietzen and O. Tirkkonen, "Secret Key Generation between Ambient Backscatter Devices," *IEEE Access*, vol. 11, pp. 13456-13468, Feb 2023.
- [11] L. Ribeiro, M. Leinonen, H. Al-Tous, O. Tirkkonen, M. Juntti, "Channel Charting Aided Pilot Reuse for Massive MIMO systems with Spatially Correlated Channels," *IEEE Open J. Commun. Soc.*, vol. 3, pp. 2390-2406, Dec 2022.
- [12] T. Pllaha, O. Tirkkonen, R. Calderbank, "Binary subspace chirps," *IEEE Trans. Info. Theory*, vol. 68, no. 12, pp. 7735-7752, Dec 2022.
- [13] H. Song, T. Goldstein, X. You, C. Zhang, O. Tirkkonen, and C. Studer, "Joint Channel Estimation and Data Detection in Cell-Free Massive MU-MIMO Systems," *IEEE Trans. Wireless Commun.* vol. 21, no. 6, pp. 4068-4084, June 2022.
- [14] S. R. Khosravirad, O. Tirkkonen, Ü. Parts, L. Zhou, D. Korpi, P. Baracca and M. A. Uusitalo, "Communications Survival Strategies for Industrial Wireless Control," *IEEE Network Mag.* vol. 36, no. 2, pp. 66-72, Feb 2022.
- [15] G. Yang, Y. Liao, Y.-C. Liang, O. Tirkkonen, G. Wang, X. Zhu, "Reconfigurable Intelligent Surface Empowered Device-to-Device Communication Underlying Cellular Networks," *IEEE Trans. Commun.*, vol. 69, no. 11, pp. 7790-7805, Nov 2021.
- [16] T. Pllaha, N. Rengaswamy, O. Tirkkonen, R. Calderbank, "Un-Weyl-ing the Clifford Hierarchy," *Quantum*, vol. 4, no. 370, 13 pp. Dec. 2020.

- [17] J. Huang, C.-X. Wang, L. Bai, J. Sun, Y. Yang, J. Li, O. Tirkkonen, M. Zhou, “A big data enabled channel model for 5G wireless communication systems,” *IEEE Trans. Big Data*, vol. 6, no. 2, pp. 211-222, June 2020.
- [18] H. Al-Tous, T. Ponnada, C. Studer, O. Tirkkonen, “Multipoint Channel Charting Based Radio Resource Management for V2V Communications”, *EURASIP J. Wireless Commun. and Netw.*, Article n. 132, 20 pp., June 2020.
- [19] N. Malm, K. Ruttik, O. Tirkkonen, “Latency-aware Power Management in Software-defined Radios”, *J. Elect. Comput. Eng.*, Article ID 1854826, pp. 1-19, Feb. 2020.
- [20] J. Deng, O. Tirkkonen, C. Studer, “MmWave Multiuser MIMO Precoding with Fixed Subarrays and Quantized Phase Shifters,” *IEEE Trans. Vehic. Tech.*, vol. 68, no. 11, pp. 11132–11145, Nov 2019.
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## A.2 Book Chapters

- [103] M.A. Uusitalo, O. Tirkkonen, L. Campoy, K.W. Sung, H. Schotten and K. Balachandran, "Spectrum," Chapter 12, *5G Mobile and Wireless Communications Technology*, eds. Osseiran, Monserrat, Marsch, pp. 336–356, Cambridge University Press, 2016.
- [104] F. Ahmed, A. Dowhuszko and O. Tirkkonen, "Network Optimization Methods for Self-organization of Future Cellular Networks: Models and Algorithms," Chapter 2, *Self-Organized Mobile Communication Technologies and Techniques for Network Optimization*, ed. A. Diab, pp. 35–65, IGI Global, 2016.
- [105] L. Wei and O. Tirkkonen, "Exact and Asymptotic Analysis of Largest Eigenvalue Based Spectrum Sensing," Chapter 1, *Foundation of Cognitive Radio Systems*, ed. S. Cheng, pp. 1–20, InTech, 2012.
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- [107] O. Tirkkonen and M. Kokkonen, "Interference, Information and Performance in Linear Matrix Modulation," Chapter 19, *Emerging location aware broadband wireless ad hoc networks*, eds. Ganesh, Kota, Pahlavan, Agusti, pp. 289–304, Springer, 2005.

## A.4 Peer Reviewed International Conference Papers

- [108] B. Shaikh, P. Garau Burguera, H. Al-Tous, M. Juntti, B. M. Khan and O. Tirkkonen, "Channel Charting Based Pilot Allocation in MIMO Systems," *IEEE PIMRC*, 7 pp., Sept 2024.
- [109] M. Bayanifar, S. Ghasemi, R.-A. Pitaval, B.M. Popovic and O. Tirkkonen, "Information Carrying Slotting Principles for Unsourced Coded Slotted Random Access," *IEEE PIMRC*, 6 pp., Sept 2024.
- [110] X. Li, H. Al-Tous, S.E. Hajri and O. Tirkkonen, "Enhanced Weighted K-nearest Neighbour Positioning," *IEEE VTC*, 6 pp., June 2024.
- [111] P. Garau Burguera, H. Al-Tous and O. Tirkkonen, "Distributed User-Centric Cell-Free Massive MIMO with Architectural Constraints," *EUCNC*, 6 pp., June 2024.

- [112] U. Singh and O. Tirkkonen, "Link-Adaptation for Downlink MIMO URLLC Transmissions," IEEE WCNC, 6 pp., April 2024.
- [113] Z. Uykan, H. Al-Tous, H. Yigitler, R. Jäntti and O. Tirkkonen, "Angle-Delay Features and Distances for Channel Charting," IEEE WCNC, 6 pp., April 2024.
- [114] M. Bayanifar, E. Heikkilä, R. Calderbank and O. Tirkkonen, "Extended Binary Chirps Codebooks for Non-Coherent Communications," IEEE GLOBECOM, 6 pp., Dec 2023.
- [115] D. Jiao, A. Ashikhmin, M. Bayanifar and O. Tirkkonen, "Using small dimensional quantum error correction codes for high-performance quantum communication," IEEE GLOBECOM, 6 pp., Dec 2023.
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