

LIST OF PUBLICATIONS

Dr. Markku Juntti

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Reviewed International Journal Articles

1990s

1. **M. J. Juntti** & B. Aazhang, "Finite memory-length linear multiuser detection for asynchronous CDMA communications". IEEE Transactions on Communications, vol. 45, no. 5, pp. 611–622, May 1997.
2. **M. J. Juntti**, B. Aazhang & J. O. Lilleberg, "Iterative implementation of linear multiuser detectors for dynamic CDMA systems". IEEE Transactions on Communications, vol. 46, no. 4, pp. 503–508, April 1998.
3. **M. J. Juntti** & M. Latva-aho, "Bit error probability analysis of linear receivers for CDMA systems in frequency-selective fading channels". IEEE Transactions on Communications, vol. 47, no. 12, pp. 1788–1791, December 1999.
4. **M. J. Juntti**, "Performance of multiuser detection in multirate CDMA systems". Wireless Personal Communications, Kluwer Academic Publishers, vol. 11, no. 3, pp. 293–311, December 1999.

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5. **M. J. Juntti**, "Performance analysis of linear multisensor multiuser receivers for CDMA in fading channels". IEEE Journal on Selected Areas in Communications – Wireless Communications Series, vol. 18, no. 7, pp. 1221–1229, July 2000.
6. **M. J. Juntti** & M. Latva-aho, "Multiuser receivers for CDMA systems in Rayleigh fading channels". IEEE Transactions on Vehicular Technology, vol. 49, no. 3, pp. 885–899, May 2000.
7. M. Latva-aho & **M. Juntti**, "LMMSE detection for DS-SS systems in fading channels". IEEE Transactions on Communications, vol. 48, no. 2, pp. 194–199, February 2000.

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8. Dj. Tujkovic, **M. Juntti** & M. Latva-aho, "Space-frequency-time turbo coded modulation". IEEE Communications Letters, vol. 5, no. 12, pp. 480–482, December 2001.

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9. K. Hooli, **M. Juntti**, M. Heikkilä, P. Komulainen, M. Latva-aho & J. Lilleberg, "Chip-level channel equalization in WCDMA downlink". EURASIP Journal on Applied Signal Processing, Special Issue on 3G Wireless Communications and Beyond, vol. 2002, no. 8, pp. 757–770, August 2002.
10. D. M. Novakovic, **M. J. Juntti** & M. L. Dukic, "Generalized full/partial closed loop transmit diversity". IEE Electronics Letters, vol. 38, no. 24, pp. 1588–1589, November 21, 2002.
11. Dj. Tujkovic, **M. Juntti** & M. Latva-aho, "Space-time turbo coded modulation: Design and applications". EURASIP Journal on Applied Signal Processing, Special Issue on Space-Time Coding, vol. 2002, no. 3, pp. 236–248, March 2002.

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12. T. Matsumoto, J. Ylitalo & **M. Juntti**, "Overview and recent challenges towards multiple-input multiple-output communications systems". IEEE Vehicular Technology Society Newsletter, vol. 50, no. 2, pp. 4–9, May 2003.
13. D. M. Novakovic, **M. J. Juntti** & M. L. Dukic, "Generalized full/partial closed loop transmit diversity algorithm for WCDMA". European Transactions on Telecommunications, vol. 14, no. 5, pp. 471–477, September/October 2003.

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14. **M. J. Juntti**, A. Rabbachin & K. Pajukoski, "Blind spreading factor detection for DS-SS". IEEE Transactions on Communications, vol. 52, no. 9, pp. 1453–1458, September 2004.
15. D. Drajić, K. Hooli & **M. Juntti**, "Turbo coding with equalization in WCDMA downlink". Wireless Personal Communications, Kluwer Academic Publishers, vol. 28, no. 4, pp. 259–276, March 2004.
16. S. Tsumura, M. Vehkaperä, Z. Li, Dj. Tujkovic, **M. Juntti** & S. Hara, "Performance evaluation of turbo and space-time turbo coded MC-SS downlink in single and multi-cell environments". IEICE Transactions on Communications, vol. E87-B, no. 10, pp. 3011–3020, Oct. 2004.

17. N. Veselinovic, T. Matsumoto & **M. Juntti**, “A PDF estimation-based iterative MIMO signal detection with unknown interference”. *IEEE Communications Letters*, vol. 8, no. 7, pp. 422–424, July 2004.
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20. S. Aromaa, P. Henttu & **M. Juntti**, “Transform selective interference suppression algorithm for spread spectrum communications”. *IEEE Signal Processing Letters*, vol. 12, no. 1, pp. 49–51, January 2005.
21. J. Lehtomäki & **M. Juntti**, “Detection of frequency hopping signals using a sweeping channelized radiometer”. *Signal Processing, Elsevier*, vol. 85, no. 10, pp. 2030–2043, October 2005.
22. J. Lehtomäki, **M. Juntti**, H. Saarnisaari & S. Koivu, “Threshold setting strategies for a quantized total power radiometer”. *IEEE Signal Processing Letters*, vol. 12, no. 11, pp. 796–799, November 2005.
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24. H. Miao & **M. Juntti**, “Space-time channel estimation and performance analysis for wireless MIMO-OFDM systems with spatial correlation”. *IEEE Transactions on Vehicular Technology*, vol. 54, no. 6, pp. 2003–2016, November 2005.
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27. N. Veselinovic, T. Matsumoto & **M. Juntti**, “Iterative PDF estimation-based multiuser diversity detection and channel estimation with unknown interference”. *EURASIP Journal on Applied Signal Processing, Special Issue on Turbo Processing*, vol. 2005, no. 6, pp. 872–882, May 2005.

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28. P. Silvola, K. Hooli & **M. Juntti**, “Sub-optimal soft-output MAP detector with lattice reduction”. *IEEE Signal Processing Letters*, 2005, vol. 13, no. 6, pp. 321–324, June 2006.
29. Y. Wu, **M. Juntti** & T. J. Lim, “Detectors and asymptotic analysis for bandwidth-efficient space-time multiple-access systems”. *IEEE Transactions on Communications*, vol. 54, no. 6, pp. 1068–1080, June 2006.

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30. **M. Juntti**, K. Hooli, K. Kiiskilä & J. Ylioinas, “Space-time equalizers for MIMO high speed WCDMA downlinks”. *IEEE Transactions on Wireless Communications*, vol. 6, no. 7, pp. 2582–2592, July 2007.
31. J. Antikainen, P. Salmela, O. Silven, **M. Juntti**, J. Takala & M. Myllylä, “Application-specific instruction set processor implementation of list sphere detector”. *EURASIP Journal on Embedded Systems*, vol. 2007, article 54173, 14 pages. (<http://www.hindawi.com/getarticle.aspx?doi=10.1155/2007/54173>)
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33. M. Codreanu, **M. Juntti** & M. Latva-aho, “On the dual decomposition based sum capacity maximization for vector broadcast channels”. *IEEE Transactions on Vehicular Technology*, vol. 56, no. 6, pp. 3577–3581, November 2007.
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37. A. Tölli, M. Codreanu & **M. Juntti**, “Compensation of non-reciprocal interference in adaptive MIMO-OFDM cellular systems”. *IEEE Transactions on Wireless Communications*, vol. 6, no. 2, pp. 545–555, February 2007.

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38. J. J. Lehtomäki, J. Vartiainen, **M. Juntti** & H. Saarnisaari, “Analysis of the LAD methods”. *IEEE Signal Processing Letters*, vol. 15, pp. 237–240, 2008.
39. A. Tölli, M. Codreanu & **M. Juntti**, “Cooperative MIMO-OFDM cellular system with soft handover between distributed base station antennas”. *IEEE Transactions on Wireless Communications*, vol. 7, no. 4, pp. 1428–1440, April 2008.

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44. J. Ylioinas & **M. Juntti**, "Iterative joint detection, decoding, and channel estimation in turbo coded MIMO-OFDM". *IEEE Transactions on Vehicular Technology*, vol. 58, no. 4, pp. 1784–1796, May 2009.

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45. J. Janhunen, O. Silven & **M. Juntti**, "Programmable Processor Implementations of K-Best List Sphere Detector for MIMO Receiver Signal Processing". *Signal Processing, Elsevier*, vol. 90, issue 1, pp. 313–323, January 2010.
46. J. Ketonen, **M. Juntti** & J. Cavallaro, "Performance–complexity comparison of Receivers for a LTE MIMO–OFDM System". *IEEE Transactions on Signal Processing*, vol. 58, no. 6, pp. 3360–3372, June 2010.
47. M. Myllylä, J. Cavallaro & **M. Juntti**, "Implementation aspects of list sphere detector algorithms for MIMO-OFDM,systems". *Signal Processing, Elsevier*, vol. 90, issue 10, pp. 2863–2876, October 2010.
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49. J. Vartiainen, J. Lehtomäki, H. Saarnisaari & **M. Juntti**, " Analysis of the Consecutive Mean Excision Algorithms". *Journal of Electrical and Computer Engineering*, vol. 2010, Article ID 459623, 13 pages, 2010. doi:10.1155/2010/459623.
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51. J. Karjalainen, M. Codreanu, A. Tölli, **M. Juntti** & T. Matsumoto, "EXIT chart based power allocation for iterative frequency domain MIMO detector". *IEEE Transactions on Signal Processing*, vol. 59, no. 4, pp. 1624–1641, April 2011.
52. X. Lu, M. Juntti, E. Kunnari, O. Piirainen, W. Li & A. Tölli, "Adaptive multi base station coordination reception for uplink wireless communications". *EURASIP Journal on Advances in Signal Processing – Special Issue on Cooperative MIMO Multicell Networks*, vol. 2011, 11 pages.
53. M. Myllylä, J. Cavallaro & **M. Juntti**, "Architecture design and implementation of the increasing radius – list sphere detector algorithm". *IEEE Transactions on VLSI Systems*, vol. 19, no. 5, pp. 895–899, May 2011.

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54. J. Janhunen, O. Silven & **M. Juntti**, "Fixed- and Floating-Point Processor Comparison for MIMO-OFDM Detector", *IEEE Journal of Selected Topics in Signal Processing – Special Issue on Soft Detection for Wireless Transmission*, submitted January 2011, revised May 2011.
55. J. Ketonen, **M. Juntti**, J. Ylioinas & J. Cavallaro, "Decision-directed channel estimation implementation for spectral efficiency improvement in mobile MIMO-OFDM". *IEEE Transactions on Vehicular Technology*, submitted May 2011.
56. J. Leinonen, J. Hämäläinen & **M. Juntti**, " Capacity analysis of downlink MIMO-OFDMA resource allocation with limited feedback". *IEEE Transactions on Communications*, submitted June 2010, revised May 2011.
57. A. Yadav, **M. Juntti** & J. Lilleberg, "Cutoff Rate Optimized Space-Time Signal Design for Partially Coherent Channel", *IEEE Transactions on Communications*, submitted January 2011.
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60. **M. Juntti** & K. Hooli, "Overview on linear multiuser equalizers for DS–CDMA Systems". In: *Wireless Communication Technologies: New Multimedia Systems*, N. Morinaga, R. Kohno and S. Sampei, Eds., Chapter 5. Kluwer Academic Publishers, 2000.

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62. H. Holma, **M. Juntti** & J. Ylitalo, "Physical layer performance". In: Wideband CDMA for UMTS, 2nd edition, H. Holma and A. Toskala, Eds., Chapter 11. John Wiley and Sons, 2001.
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Reviewed Articles in International Conference Records

Invited papers

65. **M. J. Juntti** & J. O. Lilleberg, "Performance analysis and comparison of linear multisensor and multiuser detectors". Proceedings of IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC'99) – *invited paper*, Osaka, Japan, September 12–15, 1997, vol. 2, pp. 802–806.
66. **M. Juntti**, M. Myllylä, J. Ylioinas & M. Latva-aho, "MIMO receivers in broadband wireless access – baseband implementation challenges". Proceedings of International Symposium on Wireless Personal Multimedia Communications (WPMC 2007) – *invited paper*, Jaipur, India, December 3–6, CD-ROM, 5 pages.
67. **M. Juntti**, H. Saarnisaari, J. Vartiainen, J. Lehtomäki & M. Myllylä, "Diagnostic methods – general purpose tools for concentrated signal processing". Proceedings of International Workshop on Convergent Technologies (IWCT 2005) – *invited paper*, Oulu, Finland, June 6–10, 2005, CD-ROM, 6 pages.
68. A. Yadav, **M. Juntti**, & J. Lilleberg, "Space-time constellation design based on Bhattacharya distance for partially coherent Rayleigh fading channels". Proceedings of 16th European Wireless (EW) Conference – *invited paper*, Tuscany, Italy, April 12–15, 2010, pp. 738–743.
69. L. Wei, **M. Juntti**, X. Lu, A. Tölli, E. Kunnari & O. Piirainen, "Adaptive joint multi-cell reception with uplink power control and beamforming". Proceedings of 5th ICST Conference on Communications and Networking in China (CHINACOM 2010), – *invited paper*, Tuscany, Italy, August 25–27, 2011, 6 pages.

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104. K. Kansanen, J. Fan, **M. Juntti** & M. Latva-aho, "Power controlled DS-CDMA uplink with an HD-PIC receiver". Proceedings of IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC'00), London, UK, September 18–21, 2000, vol. 2, pp. 1425–1429.
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331. "Advanced receivers for CDMA systems", tutorial presentation at IEEE International Conference on Communications (ICC 2001), Helsinki, Finland, September 12, 2001.
332. "Advanced Receivers for CDMA Systems", visiting lecture, Tampere University of Technology, Institute of Telecommunications, February 22, 2002.
333. "Physical layer and transceiver algorithm research", presentation at International FUTURA Project Research Workshop, Oulu, Finland, August 12, 2002.
334. "Multicarrier concepts", presentation at International FUTURA Project Research Workshop, Oulu, Finland, October 17, 2003.
335. "4G-järjestelmien ilmarajapintaratkaisut [Air interface solutions of 4G systems]", presentation at the Seminar of NETS Technology Program, Tekes, the National Technology Agency of Finland, Espoo, Finland, May 12, 2004.
336. "Multicarrier perspective on 4G systems", presentation at International FUTURA Project Research Workshop, Oulu, Finland, August 16, 2004.
337. "MIMO Communications with Applications to (B)3G and 4G Systems" with J. Ylitalo, tutorial presentation at Nordic Radio Symposium (NRS 2004), Oulu, Finland, August 16, 2004.
338. "MIMO Communications with Applications to (B)3G and 4G Systems" with J. Ylitalo, tutorial presentation at 2005 IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2005), Berlin, Germany, September 11, 2005.
339. "CWC B3G Research – Multicarrier MIMO Techniques for Cellular Systems", presentation at Samsung Seminar: Enabling Technologies for 4G, Samsung Electronics, IT Center, Suwon, Republic of Korea, May 16, 2005.
340. "Moniantennitekniikat langattoman tietoliikenteen kapasiteetin räjäyttäjänä [Multiantenna techniques as a means to explode the wireless communications capacity, in Finnish]", presentation at the 40th Anniversary Seminar of Department of Electrical and Information Engineering, University of Oulu, Oulu, Finland, September 30, 2005.
341. "Moniantennitekniikat langattoman tietoliikenteen kapasiteetin räjäyttäjänä [Multiantenna techniques as a means to explode the wireless communications capacity, in Finnish]", presentation at the Infotech Day, Department of Electrical and Information Engineering, University of Oulu, Oulu, Finland, November 11, 2005.
342. "Opening and MITSE Project Overview", presentation at the MITSE Project Workshop, University of Oulu, Oulu, Finland, December 8, 2005.
343. "CWC B3G Research — MIMO Receivers for 3G LTE and 4G", Department Colloquium, Department of Electrical and Computer Engineering, Rice University, Houston, Texas, USA, November 2, 2006.
344. "Introduction to MIMO Communications", Internal Seminar, Nokia Technology Platforms, Oulu, Finland, January 12, 2007.
345. "MIMO Receiver Architectures for OFDM based Broadband Wireless Access", Tekes GIGA & Ubicom Technology Program USA (NSF) Networking Seminar, Helsinki, Finland, May 22, 2007.

346. "Broadband Wireless Networks in the Advent of 3G LTE and IMT-Advance", Internal Seminar, Nokia Technology Platforms, Helsinki, Finland, September 4, 2007.
347. "Implementation Aspects of List Sphere Detector Algorithms", 1st Workshop on Commercial MIMO-Components and – Systems (CMCS 2007), mimoOn GmbH, Duisburg, Germany, September 14, 2007.
348. "Implementation Aspects of List Sphere Detector Algorithms", Department Colloquium, Department of Electrical and Computer Engineering, Rice University, Houston, Texas, USA, November 1, 2007.
349. "Implementation Aspects of List Sphere Detector Algorithms", Internal Seminar, Texas Instruments, Communication Systems Laboratory, Dallas, Texas, USA, November 2, 2007.
350. "Implementation Aspects of List Sphere Detector Algorithms", Internal Seminar, Beceem Communications, Santa Clara, California, USA, November 7, 2007.
351. "Baseband Algorithms and Architectures to Realize the MIMO Capacity – MITSE Project", GIGA Technology Program Results Promotion Seminar, Helsinki, Finland, April 1, 2008.
352. "Towards Cooperative, Cognitive, and Opportunistic Wireless Networks", Future Technologies for a Universal Radio Environment (FuTURE) Project Workshop, Shanghai, China, April 24, 2008.
353. "Wireless Access Networks Beyond 3G LTE and WiMAX - A Research Perspective", Mentor Graphics Solutions Expo, Oulu, Finland, October 7, 2008.
354. "How to Decode High Rate Transmissions of 3G LTE?" Invited presentation at Shanghai Institute of Microsystems and Information Technology (SIMIT), Shanghai, China, April 1, 2009.
355. "How to Decode High Rate Transmissions of 3G LTE?" Invited presentation at Nokia – Nokia Siemens Networks Collaborator Workshop, Shanghai, China, April 2, 2009.
356. "Baseband Algorithms and Architectures for Cooperative MIMO Systems with Applications to Evolving System Standards" Tutorial presentation at IEEE Wireless Communications and Networking Conference (WCNC 2009), Budapest, Hungary, April 5, 2009.
357. "Baseband Algorithms and Architectures for Cooperative MIMO Systems with Applications to Evolving System Standards" Tutorial presentation at International Symposium on System-on-Chip (SoC 2009), Tampere, Finland, October 5, 2009.
358. "Means to acquire channel state information at the receiver in future wireless". Invited Presentation at University of Florence, Florence, Italy, April 15, 2010.
359. "Wireless Network Challenges: Interference, Compression and Cooperation". Sino-Finland Collaboration Workshop, Shanghai, China, June 30, 2010.
360. "Wireless Network Challenges: Interference, Compression and Cooperation". Invited Presentation at International Workshop on Wireless Distributed Networks (WDN 2010) in conjunction with IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2010), Istanbul, Turkey, September 26, 2010.
361. "Future Wireless Network Challenges". Presentation at Xilinx Headquarters, San Jose, California, USA, November 10, 2010.
362. "GIGA Project Results". Presentation at Tekes GIGA Technology Program Final Results Promotion Seminar, Helsinki, Finland, March 29, 2011.

Science Popularization for General Audience and Engineers

363. J. Iinatti & **M. Juntti**, "Futura-hankkeessa eletään jo 4G-tietoliikennejärjestelmän aikaa" ["Futura project lives in the 4G era", in Finnish]. *Aktuumi* (Magazine of University of Oulu), University of Oulu, vol. 13, no. 5, pp. 12–14, November 2003.
364. **M. Juntti**, V. Tapio & M. Myllylä, "Moniantennitekniikat kehittyvien 3G-järjestelmien ytimessä – MIMO:lla vauhtia langattomaan laajakaistaan" ["Multiantenna techniques in the core of evolving 3G systems – MIMO boosting the wireless broadband", in Finnish]. *Proessori*, November 2006.
365. V. Tapio, **M. Juntti**, M. Myllylä & J. Janhunen "Tulevaisuuden laajakaistaiset langattomat verkot ja päätelaitteet – Moniantennitekniikat vaativat nopeaa signaalin käsittelyä" ["Future broadband wireless networks and terminals – multiantenna techniques require fast signal processing", in Finnish]. *Proessori*, November 2008.