

Publication Record as on Aug 22 2019

Journal Publications (Accepted)

1. **M. R. Bhavani Shankar**, A.Makur, "Allpass Delay Chain-Based IIR PR Filterbank and Its Application to Multiple Description Subband Coding," IEEE Transactions on Signal Processing, Volume 50, Number 4, pages 814 – 823, April 2002.
2. **M. R. Bhavani Shankar**, K. V. S. Hari, "Reduced Complexity Equalization Schemes for Zero Padded OFDM Systems," IEEE Signal Processing Letters, Volume 11, Issue 9, pages 752 –755, September 2004.
3. **M. R. Bhavani Shankar**, K. V. S. Hari, "On the Variations in Mutual Information of MIMO Communication Systems Due to Perturbed Channel State Information at Transmitter," IEEE Transactions on Communications, Volume 54, Issue 9, pages 1593 – 1603, September 2006.
4. P. von Wrycza, **M. R. Bhavani Shankar**, M. Bengtsson, B. Ottersten, "Spectrum Allocation for Decentralized Transmission Strategies: Properties of Nash Equilibria," EURASIP Journal on Advances in Signal Processing: Special Issue on Game Theory in Signal Processing and Communications, April 2009.
5. **M. R. Bhavani Shankar**, K. V. S. Hari, "Systematic Construction of Linear Transform based Full Diversity, Rate One Space-Time-Frequency Codes," IEEE Transactions on Signal Processing, Volume 57, Issue 6, pages 2285 – 2298, June 2009.
6. **M. R. Bhavani Shankar**, P.-D.Arapoglou, B. Ottersten, "Space-Frequency Coding for Dual Polarized Hybrid Mobile Satellite Systems," IEEE Transactions on Wireless Communications, Volume 11, Issue 8, pages 2806-2814, August 2012.
7. J. Kyröläinen, A. Hukkunen, J. Ylitalo, A. Byman, **M. R. Bhavani Shankar**, P.-D. Arapoglou, J. Grotz, "Applicability of MIMO to Satellite Communications", International Journal on Satellite Communications and Networking, Special Issue on Next Generation Mobile Satellite Technologies, September 2013 (online <http://onlinelibrary.wiley.com/doi/10.1002/sat.1040/pdf>).
8. A. Gharanjik, **M. R. Bhavani Shankar**, P.-D. Arapoglou, B. Ottersten, "Gateway Switching in Q/V band Satellite Feeder Links", IEEE Communication Letters, Volume 17, Issue 7, pages 1384-1387, July 2013.
9. R. Piazza, **M. R. Bhavani Shankar**, B. Ottersten, "Data Predistortion for Multicarrier Satellite Channels based on Direct Learning," IEEE Transactions on Signal Processing, Volume 62, Issue 22, pages 5868-5880, November 2014.
10. Alexios Aravanis, **M. R. Bhavani Shankar**, P.-D.Arapoglou, G. Danoy, P. Cottis, B. Ottersten, "Power Allocation in Multibeam Satellite Systems: A Two-Stage Multi-Objective Optimization," IEEE Transactions on Wireless Communications, Volume 14, Issue 6, pages 3171 – 3182, February 2015.
11. E. Zenteno, R. Piazza, **M. R. Bhavani Shankar**, D. Ronnow, B. Ottersten, "Low Complexity Predistortion and Equalization in Nonlinear Multicarrier Satellite Communications," EURASIP Journal on Advances in Signal Processing, March 2015.
12. A. Gharanjik, **M. R. Bhavani Shankar**, P.-D.Arapoglou, B. Ottersten, "Multiple Gateway Transmit Diversity in Q/V Band Feeder Links," , IEEE Transactions on Communications, Volume 63, Issue 3, pages 916-926, March 2015.
13. R. Piazza, **M. R. Bhavani Shankar**, B. Ottersten, "Multi-gateway Data Predistortion for Non-linear Satellite Channels," IEEE Transactions on Communications, Volume 63, Issue 10, pages 3789-3802, October 2015.
14. E. Zenteno, R. Piazza, **M. R. Bhavani Shankar**, D. Ronnow, B. Ottersten, "A MIMO Symbol Rate Signal Digital Predistorter for Nonlinear Multicarrier Satellite Channels," IET Communications, Volume 9, Issue 16, pages 2053-2059, November 2015.
15. S. Maleki, P. Ciblat, S. Chatzinotas, **M. R. Bhavani Shankar**, B. Ottersten, "Cooperative Estimation of Power and Direction of Transmission for a Directive Source," in IEEE Transactions on Cognitive Communications and Networking, Volume 2, Number 4, pages 343-357, December 2016.
16. A. Gharanjik, **M. R. Bhavani Shankar**, F. Zimmer, B. Ottersten, "Centralized Rainfall Estimation using Carrier-to-Noise of Satellite Communication Links," IEEE Journal on Selected Areas in Communications, Volume 36, Number 5, pages. 1065-1073, May 2018.
17. M. Á. Vázquez, **M. R. Bhavani Shankar**, C. Kourogiorgas, P.-D. Arapoglou, V. Icolari, S. Chatzinotas, A. D. Panagopoulos, A. I. Pérez-Neira, "Precoding, Scheduling and Link Adaptation in Mobile Interactive

Multibeam Satellite Systems," IEEE Journal on Selected Areas in Communications, Volume 36, Issue 5, pages. 971-980, May 2018.

18. Z. Abu-Shaban, H. Mehrpouyan, **M. R. Bhavani Shankar**, B. Ottersten, "Reduced complexity satellite broadcast receiver with interference mitigation in correlated noise," International Journal of Satellite Communications and Networking, Volume 36, Issue 5, pages 402-415, October 2018.
19. N. Mazzali, S. Boumard, J. Kinnunen, **M. R. Bhavani Shankar**, M. Kiviranta, N. Alagha, "Enhancing mobile services with DVB-S2X superframing," International Journal of Satellite Communications and Networking, Volume 36, Issue 6, pages 503-527, November 2018.
20. S.-H. Dokhanchi, **M. R. Bhavani Shankar**, K. V. Mishra, B. Ottersten, "A mmWave Automotive Joint Radar-Communications System," IEEE Transactions on Aerospace and Electronic Systems, Volume 55, Issue 3, pages 1241-1260, June 2019.
21. A. Gharanjik, M. Soltanalian, **M. R. Bhavani Shankar**, B. Ottersten, "Grab-n-Pull: A Max-Min Fractional Quadratic Programming Framework with Applications in Signal and Information Processing," Elsevier Signal Processing, Volume 160, pages 1-12, July 2019.
22. A. Perez-Neira, M. A. Vazquez, **M. R. Bhavani Shankar**, S. Maleki, S. Chatzinotas, "Signal Processing for High Throughput Satellite Systems: Challenges in New Interference-Limited Scenarios," IEEE Signal Processing Magazine, accepted for publication (Jan 2019), Arxiv : <https://arxiv.org/abs/1802.03958>
23. K. V. Mishra, **M. R. Bhavani Shankar**, V. Koivunen, B. Ottersten, S. Vorobyov, "Towards Millimeter Wave Joint Radar-Communications: A Signal Processing Perspective," IEEE Signal Processing Magazine, accepted for publication (May 2019). Arxiv : <https://arxiv.org/abs/1905.00690>

Journal Publications (Under Revision)

24. A. Bandi, **M. R. Bhavani Shankar**, S. Chatzinotas, B. Ottersten, "A Joint Solution for Scheduling and Precoding in Multiuser MISO Downlink Channels," second round of revision IEEE Transactions on Wireless Communications, latest submission Aug 2019.
25. A. Arora, C. Tsinos, **M. R. Bhavani Shankar**, S. Chatzinotas, B. Ottersten, "Hybrid Transceivers Design for Large Scale Antenna Arrays Using Majorization-Minimization Algorithms," Under revision (first round: major revision), August 2019.
26. S. Sedighi, **M. R. Bhavani Shankar**, B. Ottersten, "A Statistically Efficient Weighted Least Squares Estimator for Co-Array-Based DoA Estimation," Under revision (first round: major revision), August 2019.

Journal Publications (Under Preparation)

- [U1]. A. Mengali, **M. R. Bhavani Shankar**, B. Ottersten, "End-to-end Transmit Optimization in MIMO Non-linear Communication Systems," under preparation for submission to IEEE Transactions on Signal Processing, planned submission Aug 2019.
- [U2]. A. Mengali, **M. R. Bhavani Shankar**, B. Ottersten, "Optimizing transmissions in Satellite Systems with Analog Transparent Optical Feeder Links," under preparation for submission to IEEE Transactions on Communications, planned submission Oct. 2019.
- [U3]. S. H. Dokhanchi, **M. R. Bhavani Shankar**, M. Alaei-kerahroodi, B. Ottersten, "Adaptive Waveform Design for Automotive Joint Radar-Communication Systems," under preparation for submission to IEEE Transactions on Vehicular Technology, planned submission Sep. 2019.
- [U4]. C. Hammes, **M. R. Bhavani Shankar**, B. Ottersten, "Transmit Beamforming for Discrete Phase Modulated and Time Multiplexed MIMO Radar," under preparation for submission to IEEE Transactions on Aerospace and Electronic Systems, planned submission Oct. 2019.
- [U5]. C. Hammes, **M. R. Bhavani Shankar**, B. Ottersten, "Linear Slope Phase Center Motion and Block Circulant Decomposition Waveform Design for MIMO Radar," under preparation for submission to IEEE Transactions on Aerospace and Electronic Systems (correspondence), planned submission Aug. 2019.

Conference Publications (Accepted)

- [C1]. **M. R. Bhavani Shankar**, K. V. S. Hari, "On the Variations in Capacity of MIMO Communication Systems to Channel Perturbations," In Proc. IEEE International Conference on Personal Wireless Communications, ICPWC, New Delhi, India, December 2002.
- [C2]. P. von Wrycza, **M. R. Bhavani Shankar**, M. Bengtsson, B. Ottersten, "Power Allocation from a Game Theoretic Perspective: Properties of Nash Equilibria," In Proc. Asilomar Conference on Signals, Systems and Computers, October 2008.
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- [C5]. **M. R. Bhavani Shankar**, K. V. S. Hari, "On the Diversity and Complexity of MIMO Zero Padded Systems," In Proc. International Conference on Signal Processing and Communications, (SPCOM), Bangalore, India, June 2010.
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- [C7]. P.-D.Arapoglou, **M. R. Bhavani Shankar**, A. D. Panagopoulos, B. Ottersten, "Gateway Diversity Strategies in Q/V Band Feeder Links," in Proc. 17th Ka and Broadband Communications- Navigation and Earth Observation- Conference, Palermo, Italy, October 2011.
- [C8]. **M. R. Bhavani Shankar**, P.-D.Arapoglou, B. Ottersten, "Golden Codes for Dual Polarized MIMO-OFDM Transmissions in Hybrid Satellite/Terrestrial Mobile Systems," in Proc. IEEE International Conference on Communications (ICC), Kyoto, Japan, June 2011.
- [C9]. **M. R. Bhavani Shankar**, S. Chatterjee, B. Ottersten, "Detection of sparse random signals using compressive measurements," in Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Kyoto, Japan, March 2012.
- [C10]. **M. R. Bhavani Shankar**, J. Kyrolainen, P.-D.Arapoglou, A. Byman, V. Tapio, J. Grotz, "MIMO Extension to DVB-SH", in Proc. 30th AIAA International Communications Satellite Systems Conference (ICSSC), Ottawa, September 2012, online: <https://doi.org/10.2514/6.2012-15155>, author postprint: <http://hdl.handle.net/10993/39641>
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- [C12]. R. Piazza, **M. R. Bhavani Shankar**, E. Zenteno, D. Ronnow, J. Grotz, F. Zimmer, M. Grasslin, F. Heckmann, "Multicarrier digital pre-distortion/ equalization techniques for non-linear satellite channels," in Proc. 30th AIAA International Communications Satellite Systems Conference (ICSSC), Ottawa, September 2012, online <https://doi.org/10.2514/6.2012-15156>, author postprint: <http://hdl.handle.net/10993/39641>
- [C13]. R. Piazza, **M. R. Bhavani Shankar**, B. Ottersten, "Non-parametric Data Predistortion for Non-linear Channels with Memory," in Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Vancouver, Canada, May 2013.
- [C14]. R. Piazza, **M. R. Bhavani Shankar**, B. Ottersten, "Data Predistortion for Multicarrier Satellite Channels using Orthogonal Memory Polynomials," in Proc. 14th IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC), July 2013.
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- [C18]. **M. R. Bhavani Shankar**, B. Ottersten, "Effect of Imperfect Channel Estimate on the Performance of MMSE Receivers in Multibeam Satellite Systems: First Order Analysis", in Proc. IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT), Bangalore, India, January 2014.
- [C19]. A. Gharanjik, K. Liolis, **M. R. Bhavani Shankar**, B. Ottersten, "Ground-GEO Optical Feeder Link Analysis: Initial Results," in Proc. IEEE Global Conference on Signal and Information Processing, (GlobalSIP) 2014. (Invited Paper)
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- [C24]. A. Gharanjik, **M. R. Bhavani Shankar**, P.-D.Arapoglou, M. Bengtsson, B. Ottersten, "Robust Precoding Design for Multibeam Downlink Satellite Channel with Phase Uncertainty," in Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), April 2015.
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- [C33]. A. Mengali, **M. R. Bhavani Shankar**, B. Ottersten, "Joint Predistortion and PAPR Reduction in Multibeam Satellite Systems," in Proc. IEEE International Conference on Communications (ICC), May 2016.
- [C34]. N. Mazzali, F. Kayhan, **M. R. Bhavani Shankar**, "Four Dimensional Constellations for Dual-Polarized Satellite Communications," in Proc. IEEE ICC, May 2016.

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- [C40]. A. Mengali, F. Kayhan, **M. R. Bhavani Shankar**, B. Ottersten, "Exploiting diversity in future generation satellite systems with optical feeder links," in Proc. the 34th AIAA International Communications Satellite Systems Conference, October 2016, online: <https://doi.org/10.2514/6.2016-5768>, author postprint: <http://orbilu.uni.lu/handle/10993/29314>.
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