

DAFTAR PUSTAKA

- [1] H. Sun, "Conceptual study on bistatic shipborne high frequency surface wave radar," *IEEE Aerosp. Electron. Syst. Mag.*, vol. 33, no. 3, pp. 4–13, 2018, doi: 10.1109/MAES.2018.170027.
- [2] A. M. Ponsford, L. Sevgi, and H. C. Chan, "An integrated maritime surveillance system based on high-frequency surface-wave radars, Part 2: Operational status and system performance," *IEEE Antennas Propag. Mag.*, vol. 43, no. 5, pp. 52–63, 2001, doi: 10.1109/74.979367.
- [3] R. Purnamasari, A. B. Suksmono, I. Joseph Matheus Edward, and I. Zakia, "Fast Fourier Transform Sparsity for High Quality Weather Radar Reconstruction," *Int. Geosci. Remote Sens. Symp.*, pp. 7748–7751, 2019, doi: 10.1109/IGARSS.2019.8899152.
- [4] D. H. Jung, H. S. Kang, C. K. Kim, J. Park, and S. O. Park, "Sparse scene recovery for high-resolution automobile FMCW SAR via scaled compressed sensing," *IEEE Trans. Geosci. Remote Sens.*, vol. 57, no. 12, pp. 10136–10146, 2019, doi: 10.1109/TGRS.2019.2931626.
- [5] G. M. De Galland De Carnieres, T. Feuillen, L. Jacques, and L. Vandendorpe, "Sparsity-Driven Moving Target Detection in Distributed Multistatic FMCW Radars," *2019 IEEE 8th Int. Work. Comput. Adv. Multi-Sensor Adapt. Process. CAMSAP 2019 - Proc.*, no. 3, pp. 151–155, 2019, doi: 10.1109/CAMSAP45676.2019.9022656.
- [6] P. Wang, H. Meng, and Y. Wei, "FMCW radar imaging with multi-channel antenna array via sparse recovery technique," *Proc. - Int. Conf. Electr. Control Eng. ICECE 2010*, no. 1, pp. 1018–1021, 2010, doi: 10.1109/iCECE.2010.258.
- [7] H. Al-Tous, I. Barhumi, A. Kalbat, and N. Al-Dhahir, "ADMM for joint data and off-grid NBI recovery in OFDM systems," *IEEE Wirel. Commun. Netw. Conf. WCNC*, vol. 2018-April, pp. 1–6, 2018, doi: 10.1109/WCNC.2018.8377084.
- [8] H. A. Mirza, L. Aslam, M. A. Z. Raja, N. I. Chaudhary, I. M. Qureshi, and A. N. Malik, "A new computing paradigm for off-grid direction of arrival estimation using compressive sensing," *Wirel. Commun. Mob. Comput.*, vol. 2020, 2020, doi: 10.1155/2020/9280198.
- [9] X. Chen and X. Xu, "Augmented Ship Tracking Under Occlusion Conditions From Maritim Surveillance Videos," vol. 8, 2020.
- [10] T. Wang, "ADMM-Based Low-Complexity Off-Grid Space-Time Adaptive Processing Methods," vol. 8, 2020, doi: 10.1109/ACCESS.2020.3037652.
- [11] S. Shang, K. He, Z. Wang, T. Yang, M. Liu, and X. Li, "Sea Clutter Suppression Method of HFSWR Based on RBF Neural Network Model Optimized by Improved GWO Algorithm," vol. 2020, 2020.
- [12] Y. Quan, L. Zhang, Y. Li, H. Wang, and M. Xing, "OTHR Spectrum Reconstruction of Maneuvering Target with Compressive Sensing," vol. 2014, 2014.
- [13] K.-W. Gurgel, H.-H. Essen, and T. Schlick, "The University of Hamburg WERA HF Radar - Theory and Solutions," *First Int. Radiowave Oceanogr. Work. ROW*, pp. 1–7, 2001.
- [14] M. Smith, H. Roarty, S. Glenn, C. Whelan, D. Barrick, and J. Isaacson, "Methods of associating CODAR seasonde vessel detection data into unique tracks," *Ocean. 2013 MTS/IEEE - San Diego an Ocean Common*, no. April 2011, pp. 1–5, 2013, doi: 10.23919/OCEANS.2013.6741197.
- [15] L. Liu, X. Wu, F. Cheng, S. Yang, and H. Ke, "Algorithm for HF radar vektor

- current measurements,” *J. Oceanogr.*, vol. 63, no. 1, pp. 47–66, 2007, doi: 10.1007/s10872-007-0005-x.
- [16] Y. Hisaki, “Development of HF ocean radar in Japan,” *2003 Proc. Int. Conf. Radar, RADAR 2003*, pp. 510–514, 2003, doi: 10.1109/RADAR.2003.1278794.
- [17] M. Li, X. Wu, Z. Chen, J. Liu, W. J. Emery, and C. Li, “A Scheme for Multitarget Lateral Velocity Measurement with High-Frequency Monostatic Radar,” *IEEE J. Ocean. Eng.*, vol. PP, pp. 1–12, 2019, doi: 10.1109/joe.2019.2922093.
- [18] J. J. Lin, Y. P. Li, W. C. Hsu, and T. S. Lee, “Design of an FMCW radar baseband signal processing system for automotive application,” 2016, doi: 10.1186/s40064-015-1583-5.
- [19] H. L. Van Trees, *Part IV of detection, estimation, and modulation theory*. 2002.
- [20] Z. Tian, K. L. Bell, and H. L. Van Trees, “A recursive least squares implementation for LCMP beamforming under quadratic constraint,” *IEEE Trans. Signal Process.*, vol. 49, no. 6, pp. 1138–1145, 2001, doi: 10.1109/78.923296.
- [21] J. Cai, H. Zhou, S. Member, W. Huang, S. Member, and B. Wen, “Ship Detection and Direction Finding Based on Time-Frequency Analysis for Compact HF Radar,” pp. 1–5, 2020.
- [22] Q. Xin, Z. Jiang, P. Cheng, and M. He, “Signal Processing for Digital Beamforming FMCW SAR,” vol. 2014, 2014.
- [23] M. Vehkaperä, Y. Kabashima, and S. Chatterjee, “Analysis of Regularized LS Reconstruction and Random Matrix Ensembles in Compressed Sensing,” *IEEE Trans. Inf. Theory*, vol. 62, no. 4, pp. 2100–2124, 2016, doi: 10.1109/TIT.2016.2525824.
- [24] Z. Luo, C. Li, and L. Zhu, “A comprehensive survey on blind source separation for wireless adaptive processing: Principles, perspectives, challenges and new research directions,” *IEEE Access*, vol. 6, pp. 66685–66708, 2018, doi: 10.1109/ACCESS.2018.2879380.
- [25] S. Maresca, P. Braca, and J. Horstmann, “Data fusion performance of HFSWR Systems for ship traffic monitoring,” *Proc. 16th Int. Conf. Inf. Fusion, FUSION 2013*, pp. 1273–1280, 2013.
- [26] G. Vivone, P. Braca, and J. Horstmann, “Knowledge-Based Multitarget Ship Tracking for HF Surface Wave Radar Systems,” vol. 53, no. 7, pp. 3931–3949, 2015.
- [27] I. Orović, V. Papić, C. Ioana, X. Li, and S. Stanković, “Compressive Sensing in Signal Processing: Algorithms and Transform Domain Formulations,” *Math. Probl. Eng.*, vol. 2016, 2016, doi: 10.1155/2016/7616393.
- [28] Y. Wang, G. Leus, and A. Pandharipande, “Direction estimation using compressive sampling array processing,” *IEEE Work. Stat. Signal Process. Proc.*, pp. 626–629, 2009, doi: 10.1109/SSP.2009.5278497.
- [29] J. Ender, “A brief review of compressive sensing applied to radar,” *Proceedings International Radar Symposium*, vol. 1, pp. 3–16, 2013.
- [30] J. H. G. Ender, “On compressive sensing applied to radar,” *Signal Processing*, vol. 90, no. 5, pp. 1402–1414, 2010, doi: 10.1016/j.sigpro.2009.11.009.
- [31] J. Yang, T. Jin, C. Xiao, and X. Huang, “Compressed sensing radar imaging: Fundamentals, challenges, and advances,” *Sensors (Switzerland)*, vol. 19, no. 14, 2019, doi: 10.3390/s19143100.
- [32] J. Ender, “A brief review of compressive sensing applied to radar,” *Proc. Int. Radar Symp.*, vol. 1, pp. 3–16, 2013.
- [33] M. S. Greco, Y. Abramovich, J. P. Ovarlez, H. Li, and X. Yang, “Introduction to the Issue on Advanced Signal Processing Techniques for Radar Applications,”

- IEEE J. Sel. Top. Signal Process.*, vol. 9, no. 8, pp. 1363–1365, 2015, doi: 10.1109/JSTSP.2015.2497458.
- [34] Y. Shi, X. X. Zhu, W. Yin, and R. Bamler, “A fast and accurate basis pursuit denoising algorithm with application to super-resolving tomographic SAR,” *IEEE Trans. Geosci. Remote Sens.*, vol. 56, no. 10, pp. 6148–6158, 2018, doi: 10.1109/TGRS.2018.2832721.
- [35] J. Wang, S. Kwon, P. Li, and B. Shim, “Recovery of sparse signals via generalized orthogonal matching pursuit: A new analysis,” *IEEE Trans. Signal Process.*, vol. 64, no. 4, pp. 1076–1089, 2016, doi: 10.1109/TSP.2015.2498132.
- [36] B. Sathyabama, S. G. Siva Sankari, and S. Nayagara, “Fusion of satellite images using Compressive Sampling Matching Pursuit (CoSaMP) method,” *2013 4th Natl. Conf. Comput. Vision, Pattern Recognition, Image Process. Graph. NCVPRIPG 2013*, pp. 1–4, 2013, doi: 10.1109/NCVPRIPG.2013.6776256.
- [37] N. Gauraha, “Introduction to the LASSO: A Convex Optimization Approach for High-dimensional Problems,” *Resonance*, vol. 23, no. 4, pp. 439–464, 2018, doi: 10.1007/s12045-018-0635-x.
- [38] M. A. Hadi, S. Alshebeili, K. Jamil, and F. E. A. El-Samie, “Compressive sensing applied to radar systems: an overview,” *Signal, Image Video Process.*, vol. 9, no. 1, pp. 25–39, 2015, doi: 10.1007/s11760-015-0824-y.
- [39] D. Cohen and Y. C. Eldar, “Sub-Nyquist Radar Systems: Temporal , Spectral and Spatial Compression,” pp. 1–21.
- [40] B. Fursich, R. Bamler, S. Augustin, H. W. Hubers, and X. X. Zhu, “Towards single-pixel FMCW radar reconstruction,” *2016 4th Int. Work. Compress. Sens. Theory its Appl. to Radar, Sonar Remote Sensing, CoSeRa 2016*, no. CoSeRa, pp. 95–99, 2016, doi: 10.1109/CoSeRa.2016.7745707.
- [41] A. Bacci, E. Giusti, S. Tomei, M. Martorella, and F. Berizzi, “Time-slotted FMCW MIMO ISAR with Compressive Sensing image reconstruction,” *2015 3rd Int. Work. Compress. Sens. Theory its Appl. to Radar, Sonar, Remote Sensing, CoSeRa 2015*, pp. 229–233, 2015, doi: 10.1109/CoSeRa.2015.7330298.
- [42] Z. Slavik, A. Viehl, T. Greiner, O. Bringmann, and W. Rosenstiel, “Compressive sensing-based noise radar for automotive applications,” *2016 12th Int. Symp. Electron. Telecommun. ISETC 2016 - Conf. Proc.*, no. 16, pp. 17–20, 2016, doi: 10.1109/ISETC.2016.7781046.
- [43] B. Ng, L. Rosenberg, and P. Berry, “Comparison of Sparse Signal Separation Algorithms for Maritim Radar Target Detection,” *2018 Int. Conf. Radar, RADAR 2018*, pp. 6–11, 2018, doi: 10.1109/RADAR.2018.8557222.
- [44] S. Cosoli and S. de Vos, “Interoperability of direction-finding and beam-forming high-frequency radar systems: An example from the Australian high-frequency ocean radar network,” *Remote Sens.*, vol. 11, no. 3, 2019, doi: 10.3390/rs11030291.
- [45] Q. Zhu, R. Volz, and J. D. Mathews, “Coherent radar imaging based on compressed sensing,” *Radio Sci.*, vol. 50, no. 12, pp. 1271–1285, 2015, doi: 10.1002/2015RS005688.
- [46] A. Xenaki and P. Gerstoft, “Grid-free compressive beamforming,” *J. Acoust. Soc. Am.*, vol. 137, no. 4, pp. 1923–1935, 2015, doi: 10.1121/1.4916269.
- [47] H. Qiao and P. Pal, “Gridless line spectrum estimation and low-rank toeplitz matrix compression using structured samplers: A regularization-free approach,” *IEEE Trans. Signal Process.*, vol. 65, no. 9, pp. 2221–2236, 2017, doi: 10.1109/TSP.2017.2659644.
- [48] S. Shakeri, D. D. Ariananda, and G. Leus, “Direction of arrival estimation using sparse ruler array design,” *IEEE Work. Signal Process. Adv. Wirel. Commun.*

- [49] R. Pribic and L. Cifola, “Antena-array design in compressive-sensing radar systems,” *2015 3rd Int. Work. Compress. Sens. Theory its Appl. to Radar, Sonar, Remote Sensing, CoSeRa 2015*, pp. 114–118, 2015, doi: 10.1109/CoSeRa.2015.7330275.
- [50] P. Pal and P. P. Vaidyanathan, “Erratum: Nested arrays: A novel approach to array processing with enhanced degrees of freedom (IEEE Transactions on Signal Processing (2010) 58:10 (4167-4181)),” *IEEE Trans. Signal Process.*, vol. 58, no. 9, p. 4973, 2010, doi: 10.1109/TSP.2010.2061930.
- [51] M. Rossi, A. M. Haimovich, and Y. C. Eldar, “Spatial compressive sensing for MIMO radar,” *IEEE Trans. Signal Process.*, 2014, doi: 10.1109/TSP.2013.2289875.
- [52] I. Bilik, “Spatial compressive sensing for direction-of-arrival estimation of multiple sources using dynamic sensor arrays,” *IEEE Trans. Aerosp. Electron. Syst.*, 2011, doi: 10.1109/TAES.2011.5937263.
- [53] A. C. Gurbuz, J. H. McClellan, and V. Cevher, “A COMPRESSIVE BEAMFORMING METHOD Ali Cafer G. Georgia Institute of Technology Volkan Cevher University of Maryland College Park, MD 20742 – 3275,” *Source*, pp. 2617–2620, 2008.
- [54] P. Gerstoft, A. Xenaki, and C. F. Mecklenbräuker, “Multiple and single snapshot compressive beamforming,” *J. Acoust. Soc. Am.*, vol. 138, no. 4, pp. 2003–2014, 2015, doi: 10.1121/1.4929941.
- [55] S. Suleymanov, “DESIGN AND IMPLEMENTATION OF AN FMCW RADAR SIGNAL PROCESSING MODULE FOR,” no. August, 2016.
- [56] “Constantine A. Balanis - Modern antenna handbook-Wiley (2008).pdf.goj5x15.partial.”.
- [57] J. Chae and S. Hong, “Greedy Algorithms for Sparse and Positive Signal Recovery Based on Bit-Wise MAP Detection,” *IEEE Trans. Signal Process.*, vol. 68, pp. 4017–4029, 2020, doi: 10.1109/TSP.2020.3004700.
- [58] A. Y. Carmi, *Compressed Sensing & Sparse Filtering*. 2014.
- [59] U. Dias and M. E. Rane, “Comparative analysis of sensing matrices for compressed sensed thermal images,” *Proc. - 2013 IEEE Int. Multi Conf. Autom. Comput. Control. Commun. Compress. Sensing, iMac4s 2013*, pp. 265–270, 2013, doi: 10.1109/iMac4s.2013.6526420.
- [60] R. Jagannath, “Detection, estimation and grid matching of multiple targets with single snapshot measurements,” *Digit. Signal Process. A Rev. J.*, vol. 92, pp. 82–96, 2019, doi: 10.1016/j.dsp.2019.05.008.
- [61] X. Fu, M. Xiang, B. Wang, S. Jiang, and J. Wang, “PRELIMINARY RESULT OF A NOVEL YAW AND PITCH GALAT ESTIMATION METHOD FOR UAV-BASED FMCW INSAR 1. The National Key Laboratory of Microwave Imaging Technology, Institute of Electronics, Chinese Academy of Sciences, Beijing, 100190, China 2. The Univer,” pp. 463–465, 2017.
- [62] J. Walsh, J. Zhang, and E. W. Gill, “High-frequency radar cross section of the ocean surface for an FMCW waveform,” *IEEE J. Ocean. Eng.*, vol. 36, no. 4, pp. 615–626, 2011.
- [63] D. E. Barrick, *FM/CW Radar Signals and Digital Processing*, NOAA Technical Report ERL 283-WPL 26. Boulder, Colorado: National Oceanic and Atmospheric Administration, 1973.
- [64] A. G. Stove, “Linear FMCW radar techniques,” *IEE Proceedings-F*, vol. 139, no. 5, pp. 343–350, October 1992.

- [65] E. J. Candes and M. B. Wakin, "An introduction to compressive sampling," *IEEE Signal Processing Magazine*, vol. 25, no. 2, pp. 21-30, March 2008.
- [66] M. Rani, S. B. Dhok, and R. B. Deshmukh, "A systematic review of compressive sensing: Concepts, implementaion, and applications," *IEEE Access*, vol. 6, pp. 4875-4894, January 2018.
- [67] R. Tibshirani, "Regression shrinkage and selection via the Lasso: A restrospective," *Journal of the Royal Statistical Society, Series B*, vol. 73, No. 3, pp. 273-282, June 2011.
- [68] S. F. Cotter, B. D. Rao, K. Engan, and K. Kreutz-Delgado, "Sparse solutions to linear inverse problem with multiple measurement vectors," *IEEE Transactions on Signal Processing*, vol. 53, no. 7, pp. 2477-2488, July 2005.
- [69] M. Jankiraman, *FMCW Radar Design*. Norwood, MA, USA: Artech House, 2018.
- [70] L. Bruno, P. Braca, J. Horstmann, and M. Vespe, "Experimental evaluation of the range-Doppler coupling on HF surface wave radars," *IEEE Geosci. Remote Sens. Lett.*, vol. 10, no. 4, pp. 850-854, Jul. 2013.
- [71] H. L. V. Trees, *Optimum Array Processing: Part IV of Detection, Estimation, and Modulation Theory*. New York, NY, USA: Wiley, 2002.
- [72] D. L. Donoho, "Compressed sensing," *IEEE Trans. Inf. Theory*, vol. 52, no. 4, pp. 1289-1306, Apr. 2-6.
- [73] E. S. Rahayu, D. D. Ariananda, and R. Hidayat, "Single snapshot-spatial compressive beamforming for azimuth estimation and backscatter reconstruction," "in *Proc. 3rd Int. Seminar Res. Inf. Technol. Intell. Syst. (ISRITI)*, Dec. 2020, pp. 245-250.
- [74] E. S. Rahayu, R. Hidayat, D. D. Ariananda, and Iswandi, "Sequential-compressive-range azimuth estimation in radar signal processing," "in *Proc. 13th Int. Conf. Inf. Technol. Electr. Eng. (ICITEE)*, Oct. 2021, pp. 189-195.
- [75] A. Cichoki, D. Mandic, L. De Lathauwer, G. Zhou, Q. Zhao, C. Caiafa, and H. A. Phan, "Tensor decompositions for signal processing applications: From two-way to multiway component analysis," *IEEE Signal Process. Mag.*, vol. 32, no. 2, pp. 145-163, Mar. 2015.
- [76] A. Meta, P. Hoogeboom, and L. P. Lightart, "Signal processing for FMCW SAR," *IEEE Trans. Geosci. Remote Sens.*, vol. 45, no. 11, pp. 3519-3532, Nov. 2007.
- [77] S. Scheiblhofer, S. Schuster, and A. Stelzer, "Signal model and linearization for nonlinear chirps in FMCW radar SAW-ID tag request," *IEEE Trans. Microw. Theory Techn.*, vol. 54, no. 4, pp 1477-1483, Jun. 2006.
- [78] S. I. Ivanov, V. D. Kuptsov, and A. A. Fedotov, "An elaborated signal model for simultaneous range and vector velocity estimation in FMCW radar," *Sensors*, vol. 20, no. 20, p. 5860, Oct. 2020.
- [79] M. -S. Lee, "Signal modeling and analysis of a planar phased-array FMCW radar with antenna switching," *IEEE Antennas Wireless Propag. Lett.*, vol. 10, pp. 179-182, 2011.
- [80] S. I. Ivanov, V. D. Kuptsov, and A. A. Fedotov, "The signal processing algorithm of automotive FMCW radars with an extended range of speed estimation," *J. Phys., Conf. Ser.*, vol. 1236, no. 1, Jun. 2019, Art. No. 012081.
- [81] X. Li, X. Wang, Q. Yang, and S. Fu, "Signal processing for TDM MIMO FMCW millimeter-wave radar sensors," *IEEE Access*, vol. 9, pp. 167959-167971, 2021.
- [82] G. Kutyniok and Y. C. Eldar, *Compressed Sensing: Theory and Applications*. New York, NY, USA: Cambridge Univ. Press, 2012.

- [83] M. Verhelst and A. Bahai, "Where analog meets digital: Analog-to-information conversion and beyond," *IEEE Solid State Circuits Mag.*, vol. 7, no. 3, pp. 67-80, Summer. 2015.
- [84] M. Mishali, Y. C. Eldar, and A. J. Elron, "Sampling: Signal acquisition and processing in union of subspaces," *IEEE Trans. Signal Process.*, vol. 59, no. 10, pp. 4719-4734, Oct. 2011.
- [85] M. Mishali, Y. C. Eldar, O. Dounaevsky, and E. Shoshan, "Sub-Nyquist acquisition hardware for wideband communication," in *Proc. IEEE Workshop Signal process. Syst.*, Oct. 2010, pp. 156-161.
- [86] S. G. Mallat and Z. Zhang, "Matching pursuits with time-frequency dictionaries," *IEEE Trans. Signal Process.*, vol. 41, no. 12, pp. 3397-3415, Dec. 1993.
- [87] S. F. Cotter, B. D. Rao, K. Kreutz-Delgado, and J. Adler, "Forward sequential algorithms for best basis selection," *Proc. Inst. Elect. Eng. Vis., Image, Signal Process.*, vol. 146, no. 5 pp. 235-244, 1999.
- [88] B. K. Natarajan, "Sparse approximate solutions to linear systems," *SIAM J. Comput.*, vol. 24, no. 2, pp. 227-234, Apr. 1995.
- [89] A. Leon-Garcia, *Probability, Statistics, and Random processes for Electrical Engineering: Third Edition*. Upper Saddle River, NJ, USA: Prentice-Hall, 2008.