Joseph Tabrikian **October 2019**

CURRICULUM VITAE AND LIST OF PUBLICATIONS

Personal details:

Name: Joseph Tabrikian
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Education:

B.Sc.
1982-1986 - Electrical and Electronics Engineering at Tel-Aviv University, Tel-Aviv, Israel,
Degree received: B.Sc. (Magna Cum Laude), November 1986.

M.Sc.
1988-1992 - Dept. of Electrical Engineering - Systems, Tel-Aviv University, Tel-Aviv, Israel,
Title of Master's thesis: "Calibration performance of array parameters using static and dynamic sources,"
Supervisor: Prof. Anthony J. Weiss,
Degree received: M.Sc., September 1992.

Ph.D.
1992-1996 - Dept. of Electrical Engineering - Systems, Tel-Aviv University, Tel-Aviv, Israel,
Title of Doctoral dissertation: "Source localization in a multipath environment"
Supervisor: Prof. Hagit Messer-Yaron,
Degree received: Ph.D., February 1997.

Employment History:

Since 2019 - Head of the School of Electrical and Computer Engineering,
Ben-Gurion University of the Negev, Beer-Sheva, Israel.

2017-2019 - Head of the Department of Electrical and Computer Engineering,
Ben-Gurion University of the Negev, Beer-Sheva, Israel.

Since 1998 - Department of Electrical and Computer Engineering,
Ben-Gurion University of the Negev, Beer-Sheva, Israel.

Summer 2001 - Visiting researcher,
Dept. of EECS, The University of Illinois at Chicago, IL.

Summer 1999 - Visiting researcher,
Dept. of ECE, Duke University, NC.

1996-1998 - Research Assistant Professor,
Department of Electrical and Computer Engineering,
Duke University, Durham, NC, USA.

Summer 1995 - Visiting researcher,
Department of Electrical and Computer Engineering,
Duke University, Durham, NC, USA.

1991-1996 - Research Assistant,
Department of Electrical Engineering-Systems,
Tel-Aviv University, Tel-Aviv, Israel.

1991-1996 - Senior system engineer and project supervisor in the areas of radar data analysis, tracking and estimation algorithms,
ATL (Advanced Technologies Ltd), Israel.

1984-1986 - Research on speech and image compression,
Tadiran, Israel.

Professional Functions:

1. Since 2019 – Head of the School of ECE, Ben-Gurion University of the Negev.
2. Since 2018 – Senate member, Ben-Gurion University of the Negev.
3. 2018-2019 – Appointment committee member of Dept. of CSE, Ben-Gurion University of the Negev.
4. 2017-2019 – Head of the Dept. of ECE, Ben-Gurion University of the Negev.
5. Since 2017 – Signal Processing Theory and Methods (SPTM) Technical Committee member - IEEE Signal Processing Society. Since 2019 - Awards Subcommittee Chair.
6. February 2017 – BGU Radar Symposium Chair: http://in.bgu.ac.il/en/engn/ece/radar/Radar2017/Pages/default.aspx
7. January 2016 – BGU Radar Symposium Chair: http://in.bgu.ac.il/en/engn/ece/radar/Pages/default.aspx
8. Since 2015 – Special Area Team (SAT) member of EURASIP for Signal Processing for Multisensor Systems (SPMuS).
9. 2015-2018 – Senior Area Editor of the IEEE Signal Processing Letters.
10. 2012-2015 - Associate Editor of the IEEE Signal Processing Letters.
11. 2001-2004 and 2011-2015 - Associate Editor, IEEE Transactions on Signal Processing.
12. 2010-2015 – Sensor Array and Multichannel Signal Processing (SAM) Technical Committee member - IEEE Signal Processing Society. During 2012-2015 - Chair of Radar Array Processing Area Subcommittee.

13. 2010 – Technical Program Committee Co-Chair – The 6th IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM 2010).

14. Technical program committee member in several conferences. Recent conferences: ICASSP 2010, CIP 2010, ISPA 2011, CAMSAP 2011, ICASSP 2011, ICASSP 2012, SAM 2012, CIP 2012, EUSIPCO 2012, CAMSAP 2013, WCNC 2013, ICASSP 2013, EUSIPCO 2013, SAM 2014, ICASSP 2014, EUSIPCO 2014, ICASSP2015, EUSIPCO 2015, CAMSAP2015, ICASSP2016, SAM2016, EUSIPCO 2016, ICASSP2017, ICASSP2018, EUSIPCO 2019, ICASSP2019, CAMSAP2019.

Educational Activities:

(a) Courses:

1. "Introduction to Stochastic Processes" – Undergraduate.
2. "Introduction to Signal and Image Processing" – Undergraduate.
3. "Introduction to Statistical Signal Processing" – Undergraduate.
4. "Introduction to Estimation Theory" – Graduate.
5. "Detection Theory" - Graduate.
6. "Estimation Theory" – Graduate.
7. "Spatial Signal Processing" - Graduate.
8. "Advanced Topics in Detection and Estimation Theory" – Graduate.

(b) Research students:

Graduated Ph.D. Students:

1. I. Bilik, "Automatic target recognition and classification using Doppler information," October 2007.
2. D. Lederman, "EEG-based recognition of audio patterns using array signal processing," Ph.D. jointly supervised with Prof. A. Cohen (R.I.P.), July 2009.
3. K. Todros, "New classes of lower bounds for parameter estimation," November 2011, *with Distinction*.
4. T. Routtenberg, "New classes of performance lower bounds for detection and estimation theory," April 2013.
5. S. Bar, "Detection and estimation theory in the presence of nuisance parameters," (Direct Ph.D. track), December 2018.
6. E. Nitzan, "Estimation theory with side information for periodic and constrained problems," jointly supervised with Dr. T. Routtenberg, May 2019.

Graduated M.Sc. Students:

7. I. Avital, "Sensor gain calibration in an uncertain shallow water environment," jointly supervised with Prof. H. Messer-Yaron, July 2002 (Tel Aviv University).
8. M. Wasserblatt, "Underwater acoustic communications using a-priori statistics on channel time-variations," October 2002.
9. D. Rahamim, "Source localization using polarized smart antennas sources in a multipath environment," jointly supervised with Dr. R. Shavit, July 2003.
10. I. Bekkerman, "Radar aperture enhancement using orthogonal coded signals," August 2004.
11. L. Weizman, "Automatic detection of single lung intubation," jointly supervised with Prof. A. Cohen (R.I.P.), October 2004.

12. Y. Amos, "Parametric modeling of nonstationary signal spectrum," M.Sc., June 2005.
13. A. Kisliansky, "Array signal processing in the presence of sensor coupling," M.Sc., jointly supervised with Prof. R. Shavit, October 2005.
14. E. Fisher, "Voicing activity decision in the presence of interference using GLRT," jointly supervised with Dr. S. Dubnov, October 2005.
15. M. Arnon-Taragan, "Separation of mixed audio sources," jointly supervised with Dr. S. Dubnov, October 2005.
16. Y. Noam, "Marginal likelihood for estimation and detection theory," March 2006.
17. N. Ofir, "Capacity analysis for frequency-selective fading channels," jointly supervised with Prof. H. Messer-Yaron, May 2006. (Tel Aviv University).
18. K. Todros, "Maximum likelihood based techniques for blind source separation and approximate joint diagonalization," October 2006.
19. T. Routtenberg, "Blind source separation in MIMO-AR systems using GMM," September 2007.
20. Shai Tejman-Yarden, "One-lung intubation detection," M.Sc., jointly supervised with Prof. A. Cohen (R.I.P.), October 2007.
21. G. Ofek, "Coherent source localization using neural networks," jointly supervised with Prof. M. Aladjem, February 2008.
22. M. Levitsky, "SIMO-OFDM channel estimation using geometrical channel model," jointly supervised with Prof. R. Shavit, November 2009.
23. A. Koretz, "Blind source separation of audio signals using a single sensor," December 2009.
24. A. Pinkus, "Barankin bounds for range and Doppler estimation using orthogonal signal transmission," July 2010.
25. Y. Eisenberg, "Low complexity space-frequency waveform design for MIMO-OFDM systems," September 2010.
26. R. Winik, "Applicability of the Barankin bound in parameter estimation," October 2010.
27. W. Huleihel, "Adaptive waveform design for cognitive MIMO radar," jointly supervised with Prof. R. Shavit, October 2012.
28. Y. Stark, "MMSE-based speech enhancement using *a-priori* statistical information," February 2013.
29. M. Teitel, "Adaptive waveform design for optimal sequential detection," August 2013.
30. S. Bar, "Performance bounds and optimal parameter estimation in the presence of nuisance parameters," December 2014 (part of direct Ph.D. track).
31. N. Shraga, "Optimal waveform design for target tracking for MIMO Sonar," M.Sc., jointly supervised with Prof. H. Messer-Yaron, April 2015. (Tel Aviv University).
32. E. Nitzan, "Estimation theory with side information for periodic and constrained problems," M.Sc. (combined with Ph.D.), February 2015.
33. O. Isaacs, "Adaptive spatial sampling for cognitive radar," M.Sc., November 2016.

Current Ph.D. students:

1. S. Villeval, "Adaptive space-time waveform design for cognitive MIMO radar," expected graduation date: October 2022.
2. I. Eljarat, "Multi-radar coexistence," expected graduation date: October 2022.
3. O. Aharon, "Sparse and adaptive pulse repetition interval for range and Doppler estimation," expected graduation date: October 2022.

Current M.Sc. students:

4. S. Mizrahi, "Efficient computation of MSE lower bounds via matching pursuit and an extension of the Weiss-Weinstein bound," M.Sc., expected graduation date: October 2019.
5. O. Mamo, "Adaptive waveform design with non-Bayesian criteria for cognitive MIMO radar," expected graduation date: October 2020.
6. T. Kroutman, "Cognitive radar for moving target detection," M.Sc., expected graduation date: November 2019.
7. N. Rubinstein, "Cognitive FDA radar," M.Sc., expected graduation date: November 2019.
8. O. Krauz, "Performance bounds for estimation of arbitrary function of unknown deterministic parameters," M.Sc., expected graduation date: November 2019.

Honors and Awards:

1. 2019 – Paper Award Finalist coauthor, *EUSIPCO 2019*, A Coruna, Spain.
2. 2019 – **Fellow of IEEE** *for Contributions to Estimation Theory and MIMO Radars*.
3. 2018 – **Best Paper Award** coauthor, *SSP 2018*, Freiburg, Germany.
4. 2017 – **Best Paper Award** coauthor, *ICASSP 2017*, New-Orleans, LA (3^{rd} prize).
5. 2015 – Paper Award Finalist coauthor - *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP2015*), Cancun, Mexico
6. 2015 – Outstanding Lecturer, Dept. of ECE, BGU, for the course: Introduction to Estimation Theory.
7. 2014 – Outstanding Lecturer, Dept. of ECE, BGU, for the course: Introduction to Stochastic Processes.
8. 2013 – **Best Paper Award** coauthor - *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP2013*), Saint Martin, (1^{st} prize).
9. 2012 – Paper Award Finalist coauthor - *IEEE Workshop on Sensor Array and Multichannel Processing* (*SAM2012*), Hoboken, NJ.
10. 2011 – **Best Paper Award** coauthor - *IEEE International Conference on Acoustic, Speech and Signal Processing* (*ICASSP2011*), Prague.
11. 2010 – Paper Award Finalist coauthor - *IEEE International Symposium on Information Theory* (*ISIT2010*), Austin, Tx.
12. 2009 – Outstanding Lecturer, Dept. of ECE, BGU, for the course: Introduction to Estimation Theory.
13. 2006 – **Best Paper Award** coauthor – *IEEE 24^{th} Convention of Electrical and Electronics Engineers*.
14. 2006 – **Best Paper Award** coauthor - *IEEE International Radar Conference*, Syracuse, NY.

15. 2005 – **Best Paper Award** coauthor - *IEEE International Radar Conference*, Washington DC.
16. 1995 - Sara and Don Marejn Award for Excellence in Engineering and Exact Sciences, Tel-Aviv University.
17. 1989 - Treny Arigo Scholarship for Excellence in Electrical Engineering, Tel-Aviv University.
18. 1988 - Kranzberg Scholarship for Excellence in Electrical Engineering, Tel-Aviv University.

Scientific publications:

Refereed book chapters:

1. I. Bilik and J. Tabrikian, "Knowledge-based target classification for Doppler radars," in *Knowledge-Based Radar Detection, Tracking and Classification*, edited by F. Gini and M. Rangaswamy, Wiley 2007, Chapter 9, pp. 197-224.
2. J. Tabrikian, "Performance bounds and techniques for target localization using MIMO radars," in *MIMO Radar Signal Processing*, Ed. J. Li and P. Stoica, Wiley, November 2008, Chapter 4, pp. 153-192.
3. I. Bilik and J. Tabrikian, "MMSE-based filtering for linear and nonlinear systems in the presence of non-Gaussian system and measurement noise," in *Kalman Filter Recent Advances and Applications*, I-Tech Education and Publishing, April 2009.

Refereed papers in scientific journals:

1. I. Bilik, O. Longman, S. Villeval, and J. Tabrikian "The Rise of Radar for Autonomous Vehicles: Signal processing solutions and future research directions," *IEEE Signal Processing Magazine*, vol. 36, no. 5, pp. 20-31, September 2019.

2. E. Nitzan, T. Routtenberg, and J. Tabrikian "Cramér-Rao bound under norm constraint," *IEEE Signal Processing Letters*, vol. 26, no. 9, pp. 1393-1397, September 2019.

3. E. Nitzan, T. Routtenberg, and J. Tabrikian "Cramér-Rao bound for constrained parameter estimation using Lehmann-unbiasedness," *IEEE Transactions on Signal Processing*, vol. 67, no. 3, pp. 753-768, February 2019.

4. S. Bar and J. Tabrikian, "A sequential framework for classification and model order selection," *IEEE Transactions on Signal Processing*, vol. 66, no. 20, pp. 5484-5499, October 2018.

5. E. Nitzan, T. Routtenberg, and J. Tabrikian "Bobrovsky-Zakai type bound for periodic stochastic filtering," *IEEE Signal Processing Letter*, vol. 25, no. 10, pp. 1460-1464, October 2018.

6. S. Bar and J. Tabrikian, "The risk-unbiased Cramér-Rao bound for non-Bayesian multivariate parameter estimation," *IEEE Transactions on Signal Processing*, vol. 66, no. 18, pp. 4920-4934, September 2018.

7. M. Stein, S. Bar, J. A. Nossek, and J. Tabrikian, "Performance analysis for channel estimation with 1-bit ADC and unknown quantization threshold," *IEEE Transactions on Signal Processing*, vol. 66, no. 10, pp. 2557-2571, May 2018.

8. S. Sar-Shalom and J. Tabrikian, "Efficient computation of MSE lower bounds via matching pursuit," *IEEE Signal Processing Letters*, vol. 24, no. 12, pp. 1798-1802, December 2017.

9. E. Nitzan, T. Routtenberg, and J. Tabrikian, "Stochastic filtering using periodic cost functions," *ISIF Journal of Advances in Information Fusion*, vol. 11, no. 2, pp. 123-137, December 2016.

10. E. Nitzan, T. Routtenberg, and J. Tabrikian, "A new class of Bayesian cyclic bounds for periodic parameter estimation," *IEEE Transactions on Signal Processing*, vol. 64, no. 1, pp. 229-243, January 2016.

11. S. Bar and J. Tabrikian, "Bayesian estimation in the presence of deterministic nuisance parameters—Part I: Performance bounds," *IEEE Transactions on Signal Processing*, vol. 63, no. 24, pp. 6632-6646, December 2015.

12. S. Bar and J. Tabrikian, "Bayesian estimation in the presence of deterministic nuisance parameters —Part II: Estimation methods," *IEEE Transactions on Signal Processing*, vol. 63, no. 24, pp. 6647-6658, December 2015.

13. N. Sharaga, J. Tabrikian, and H. Messer, "Optimal cognitive beamforming for Target Tracking in MIMO Radar/Sonar," *Journal of Selected Topics on Signal Processing*, vol. 9, no. 8, pp. 1440-1450, December 2015.

14. K. Todros, R. Winik, and J. Tabrikian, "On the limitations of Barankin type bounds for MLE threshold prediction," *Signal Processing*, vol. 108, pp. 622-627, March 2015.

15. T. Routtenberg and J. Tabrikian, "Cyclic Barankin bounds for non-Bayesian periodic parameter estimation," *IEEE Transactions on Signal Processing*, vol. 62, no. 13, pp. 3321-3326, July 2014.

16. W. Huleihel, J. Tabrikian, and R. Shavit "Optimal adaptive waveform design for cognitive MIMO radar," *IEEE Transactions on Signal Processing*, vol. 61, no. 20, pp. 5075-5089, October 2013.

17. Y. Eisenberg and J. Tabrikian, "Low complexity bit and power allocation for MIMO-OFDM systems using space-frequency beamforming," *Signal Processing* 93(7), pp. 1961-1975, 2013.

18. T. Routtenberg and J. Tabrikian, "Non-Bayesian periodic Cramér-Rao bound," *IEEE Transactions on Signal Processing*, vol. 61, no. 4, pp. 1019-1032, February 2013.

19. V. Tourbabin, M. Agmon, B. Rafaely, and J. Tabrikian, "Optimal real-weighted beamforming and its application to linear and spherical arrays," *IEEE Transactions on Speech, Audio, and Language Processing*, no. 9, pp. 2575-2585, September 2012.

20. T. Routtenberg and J. Tabrikian, "A general class of outage error probability lower bounds in Bayesian parameter estimation," *IEEE Transactions on Signal Processing*, vol. 60, no. 5, pp. 2152-2166, May 2012.

21. T. Routtenberg and J. Tabrikian, "Bayesian parameter estimation using periodic cost functions," *IEEE Transactions on Signal Processing*, vol. 60, no. 3, pp. 1229-1240, March 2012.

22. D. Lederman and J. Tabrikian, "Classification of multichannel EEG patterns using parallel hidden Markov models," *Medical & Biological Engineering & Computing*, vol. 50, pp. 310-328, March 2012.

23. K. Todros and J. Tabrikian, "Uniformly best biased estimators in non-Bayesian parameter estimation," *IEEE Transactions on Information Theory*, vol. 57, no. 11 pp. 7635-7647, November 2011.

24. G. Ofek, J. Tabrikian, and M. Aladjem, "A modular neural network for direction-of-arrival estimation of two sources," *Neurocomputing*, vol. 74, no. 17, pp. 3092-3102, October 2011.

25. A. Koretz and J. Tabrikian, "Maximum a posteriori probability multiple pitch tracking using the harmonic model," *IEEE Transaction on Audio, Speech, and Language Processing*, vol. 19, no. 7, pp. 2210-2221, September 2011.

26. T. Li, J. Tabrikian, and A. Nehorai, "A Barankin-type bound on direction estimation using acoustic sensor arrays," *IEEE Transactions on Signal Processing*, vol. 59, no. 1, pp. 431-435, January 2011.

27. K. Todros and J. Tabrikian, "General classes of performance lower bounds for parameter estimation - Part I: non-Bayesian bounds for unbiased estimators," *IEEE Transactions on Information Theory*, vol. 56, no. 10, pp. 5045-5063, October 2010.

28. K. Todros and J. Tabrikian, "General classes of performance lower bounds for parameter estimation - Part II: Bayesian bounds," *IEEE Transactions on Information Theory*, vol. 56, no. 10, pp. 5064-5082, October 2010.

29. K. Todros and J. Tabrikian, "QML-based joint diagonalization of positive-definite Hermitian matrices," *IEEE Transactions on Signal Processing*, vol. 58, no. 9, pp. 4658-4673, September 2010.

30. I. Bilik and J. Tabrikian, "MMSE-based filtering in presence of non-Gaussian system and measurement noise ," *IEEE Transactions on Aerospace and Electronics Systems*, vol. 46, no. 3, pp. 1153-1170, July 2010.

31. T. Routtenberg and J. Tabrikian, "Blind MIMO-AR system identification and source separation with finite-alphabet," *IEEE Transactions on Signal Processing*, vol. 58, no. 3, pp. 990-1000, March 2010.

32. I. Bilik and J. Tabrikian, "Maneuvering target tracking in the presence of glint using the nonlinear Gaussian mixture Kalman filter," *IEEE Transactions on Aerospace and Electronics Systems*, vol. 46, no. 1, pp. 246-262, January 2010.

33. T. Routtenberg and J. Tabrikian, "MIMO-AR system identification and blind source separation for GMM-distributed sources," *IEEE Transactions on Signal Processing*, vol. 57, no. 5, pp. 1717-1730, May 2009.

34. L. Weizman, J. Tabrikian, and A. Cohen, "Detection of one-lung intubation incidents," *Annals of Biomedical Engineering*, vol. 36, no. 11, pp. 1844-1855, November 2008.

35. I. Bilik and J. Tabrikian, "Radar target classification using Doppler signatures of human locomotion models," *IEEE Transactions on Aerospace and Electronics Systems*, vol. 43, no. 4, pp. 1510-1522, October 2007.

36. S. Tejman-Yarden, A. Zlotnik, L. Weizman, J. Tabrikian, A. Cohen, N. Weksler, and G. Gurman," Acoustic monitoring of lung sounds for detection of one-lung intubation," *Journal of Anesthesia and Analgesia*, vol. 105, no. 2, pp. 397-404, August 2007.

37. Y. Noam and J. Tabrikian, "Marginal likelihood for estimation and detection theory," *IEEE Transactions on Signal Processing*, vol. 55, no. 8, pp. 3963-3974, August 2007.

38. K. Todros and J. Tabrikian, "Blind separation of independent sources using Gaussian mixture model," *IEEE Transactions on Signal Processing*, vol. 55, no. 7, pp. 3645-3658, July 2007.

39. A. Kisliansky, R. Shavit, and J. Tabrikian, "Direction of arrival estimation in the presence of noise coupling in antenna arrays," *IEEE Transactions on Antennas and Propagation*, vol. 55, no. 7, pp. 1940-1947, July 2007.

40. G. Katz, D. Sadot, and J. Tabrikian, "Electrical dispersion compensation equalizers in optical direct- and coherent-detection systems," *IEEE Transactions on Communications*, vol. 54, no. 11, pp. 2045-2050, November 2006.

41. I. Bekkerman and J. Tabrikian, "Target detection and localization using MIMO radars and sonars," *IEEE Transactions on Signal Processing*, vol. 54, no. 10, pp. 3873-3883, October 2006.

42. E. Fisher, J. Tabrikian, and S. Dubnov, "Generalized likelihood ratio test for voiced-unvoiced decision in noisy speech using the harmonic model," *IEEE Transactions on Speech and Audio Processing*, vol. 14, no. 2, pp. 502-510, March 2006.

43. I. Bilik, J. Tabrikian, and A. Cohen, "GMM-based target classification for ground surveillance Doppler radar," *IEEE Transactions on Aerospace and Electronics Systems*, vol. 42, no. 1, pp. 267-278, January 2006.

44. S. Dubnov, J. Tabrikian, and M. Arnon-Targan, "Speech source separation in convolutive environments using space-time-frequency analysis," *EURASIP Journal on Applied Signal Processing*, January 2006.

45. D. Rahamim, J. Tabrikian, and R. Shavit, "Source localization using vector sensor array in a multipath environment," *IEEE Transactions on Signal Processing*, vol. 52, no. 11, pp. 3096-3103, November 2004.

46. J. Tabrikian, R. Shavit, and D. Rahamim, "An efficient vector sensor configuration for source localization," *IEEE Signal Processing Letters*, vol. 11, no. 8, pp. 690-693, August 2004.

47. J. Tabrikian, S. Dubnov, and Y. Dickalov, "Maximum a-posteriori probability pitch tracking in noisy environments using harmonic model," *IEEE Transactions on Speech and Audio Processing*, vol. 12, no. 1, pp. 76-87, January 2004.

48. A. Ephraty, J. Tabrikian, and H. Messer, "Underwater source detection using a spatial stationarity test," *J. Acoust. Soc. Am.*, vol. 109, no. 3, pp. 1053-1063, March 2001.

49. K. Harmanci, J. Tabrikian, and J. L. Krolik, "Relationships between adaptive minimum-variance beamforming and optimal source localization," *IEEE Transactions on Signal Processing*, vol. 48, no. 1, pp. 1-13, January 2000.

50. J. Tabrikian and J. L. Krolik, "Theoretical performance limits on tropospheric refractivity estimation using point-to-point microwave measurements," *IEEE Transactions on Antennas and Propagation*, vol. 47, no. 11, pp. 1727-1734, November 1999.

51. J. Tabrikian and J. L. Krolik, "Barankin bounds for source localization in an uncertain ocean environment," *IEEE Transactions on Signal Processing*, vol. 47, no. 11, pp. 2917-2927, November 1999.

52. J. Tabrikian, G. Fostick, and H. Messer, "Detection of environmental mismatch in a shallow water waveguide," *IEEE Transactions on Signal Processing*, vol. 47, no. 8, pp. 2181-2190, August 1999.

53. J. Tabrikian, J. L. Krolik, and H. Messer, "Robust maximum likelihood source localization in an uncertain shallow water waveguide," *J. Acoust. Soc. Am.*, vol. 101, no. 1, pp. 241-249, January 1997.

54. J. Tabrikian and H. Messer, "Source localization in a waveguide using polynomial rooting," *IEEE Transactions on Signal Processing*, vol. 44, no. 8, pp. 1861-1871, August 1996.

55. J. Tabrikian and H. Messer, "Three dimensional source localization in a waveguide," *IEEE Transactions on Signal Processing*, vol. 44, no. 1, pp. 1-13, January 1996.

Reprinted papers in book series:

The following papers have been reprinted in *Bayesian Bounds for Parameter Estimation and Nonlinear Filtering and Tracking*. Ed. H. L. Van Trees and K. Bell, Wiley-IEEE Press, 2007.

1. J. Tabrikian and J. L. Krolik, "Theoretical performance limits on tropospheric refractivity estimation using point-to-point microwave measurements".

2. J. Tabrikian and J. L. Krolik, "Efficient computation of the Bayesian Cramer-Rao bound on estimating parameters of Markov models".

3. A. Pinkus and J. Tabrikian, "Barankin bound for range and Doppler estimation using orthogonal signal transmission".

4. J. Tabrikian, "Barankin bounds for target localization for MIMO radars".

Conferences

(a) Invited presentations:

1. J. Tabrikian and J. L. Krolik, "Performance limits on underwater acoustic matched-field processing," invited presentation in the *133rd meeting of Acoustical Society of America*, State College, PA, June 1997.

2. J. Tabrikian, "Barankin bounds for target localization for MIMO radars," invited presentation in the *4th IEEE Workshop on Sensor Array and Multichannel Processing*, Waltham, MA, July 2006, pp. 278-281.

(b) Refereed conference papers:

3. J. Tabrikian and H. Messer, "Source localization in a waveguide - spatial sampling issues and algorithms," *Proc. of Comm-Sphere*, January 1995, pp. 185-190.

4. J. Tabrikian and H. Messer, "Optimal and sub-optimal source localization in a waveguide," *Proc. of the IEEE eighteenth Convention of Electrical and Electronics Engineers in Israel*, March 1995.

5. J. Tabrikian and H. Messer, "Source localization in shallow water using polynomial rooting," *Proc. of ICASSP1995*, May 1995, pp. 3111-3114.

6. J. Tabrikian, J. L. Krolik, and H. Messer, "Robust Maximum-Likelihood source localization by exploiting predictable acoustic modes," *Proc. of ICASSP*1996, May 1996, pp. 3090-3093.

7. G. Fostick, J. Tabrikian, and H. Messer, "A test for detection of local modeling mismatches in shallow water," *Proc. of ICASSP*1996, May 1996, pp. 3078-3081.

8. A. Ephraty, J. Tabrikian, and H. Messer, "A test for spatial stationarity and applications in source detection in bounded environments," *Proc. of 8th IEEE Signal Processing Workshop on Statistical Signal and Array Processing*, June 1996, pp. 247-250.

9. J. Tabrikian, H. Messer, and G. Fostick, "Robust Maximum-Likelihood estimation of local environmental parameters in shallow water," *Proc. of ICSP'96*, October 1996, vol. 2, pp. 1531-1534.

10. J. Tabrikian and H. Messer, "Robust parameter estimation with presence of nuisance parameters," *Proc. of IEEE nineteenth Convention of Electrical and Electronics Engineers in Israel*, November 1996.

11. A. Ephraty, J. Tabrikian, and H. Messer, "Consistent non-parametric estimation of spatial spectrum," *Proc. of IEEE nineteenth Convention of Electrical and Electronics Engineers in Israel*, November 1996, vol. 5, pp. 3705-3708.

12. J. Tabrikian and J. L. Krolik, "Barankin bounds for source localization in shallow water," *Proc. of ICASSP*, April 1997, vol. 1, pp. 499-502.

13. A. Ephraty, J. Tabrikian, and H. Messer, "Robust source detection in shallow water," *Proc. of ICASSP1997*, April 1997, vol. 5, pp. 3705-3709.

14. J. Tabrikian, O. Wust, and J. L. Krolik, "The performance of microwave sensing techniques for tropospheric refractivity estimation," *Proc. of PIERS'97*, July 1997.

15. J. L. Krolik and J. Tabrikian, "Tropospheric refractivity estimation using radar clutter from the sea surface," *Proc. of the 1997 Battlespace Atmospherics Conference, SSC-SD*, San Diego, December 1997, pp. 635-642.

16. K. Harmanci, J. Tabrikian, and J. L. Krolik, "Maximum-Likelihood track-before-detect matched-field beamforming with SWELLEX data," *135th meeting of Acoustical Society of America*, Seattle, vol. 2, pp. 1331-1332, June 1998.

17. A. Eliaz, J. Tabrikian, and H. Messer, "Robust communications techniques in uncertain shallow water acoustic channels," *Proc. of 9th IEEE Signal Processing Workshop on Statistical Signal and Array Processing*, September 1998, 124-127.

18. J. Tabrikian and J. L. Krolik, "Efficient computation of the Bayesian Cramér-Rao bound on estimating parameters of Markov models," *Proc. of ICASSP*1999, March 1999, vol. 3, pp. 1761-1764.

19. J. L. Krolik, J. Tabrikian, S. Vasudevan, and L. T. Rogers, "Using radar sea clutter to estimate refractivity profiles associated with the capping inversion of the marine atmospheric boundary layer," *Proc. Intl. Geoscience and Remote Sensing Symposium*, July 1999, pp. 649-651.

20. I. Avital, J. Tabrikian, and H. Messer, "Multi-tone sensor gain calibration in an uncertain underwater environment," *Proc. of SAM2000*, March 2000, pp. 107-111.

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Research Grants:

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3. J. Tabrikian, PI, "Pseudo-random PRI in radar signal design," Maf'at, Ministry of Defense, September 2018 – May 2019.

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5. J. Tabrikian, PI, "Detection and estimation theory in the presence of nuisance parameters," **ISF**, October 2015 – September 2019.
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