

CSSIP Publications: July 1997 - June 1998

Books

- Tay T, Mareels I and Moore J B, High Performance Control, Birkhauser, Boston, July 1997

Book Chapters

- Mareels I, Complex dynamics of adaptive systems, in Chaos and Control, edited by Judd K, Teo K, Mees A, Birkhauser, Mar 1997, pp 226-250.

Journals

1. Qiu W and Hua Y, Performance analysis of a blind channel identification method based on second-order statistics, IEEE Transactions on Information Theory, Vol 43, No 4, pp 1245-1253 , Jul 1997.
2. Cheng Q and Hua Y, Detection of cisoids using least square error function IEEE Transactions on Signal Processing, Vol 45, pp 1584-1590 July 1997.
3. Qiu W and Hua Y, A GCD method for blind channel identification, Digital Signal Processing, Vol. 7, No. 3, pp. 199-205, July 1997.
4. Yang H and Hua Y, On performance of cross-relation method for blind channel identification, Signal Processing, Vol. 62, No. 2, pp.187-205, 1997.
5. Hua Y and Abed-Meraim K, Techniques of eigenvalues estimation and association, Digital Signal Processing, Vol. 7, No. 4, pp. 253-259, October 1997.
6. Chen T, Hua Y and Yan W, Global convergence of Oja's subspace algorithm for principal component extraction, IEEE Transactions on Signal Processing , Vol. 9, No. 1, pp. 58-67, Jan 1998.
7. Blackmore K, Williamson R and Mareels I, Decision region approximation by polynomials or neural networks, IEEE Trans Inf

Theory, Vol 43, No 3, pp903-908, 1997.

8. Nijmeijer H and Mareels I, An observer looks at synchronisation, IEEE CAS I Fundamental Theory and Applications, Special issue on Control of chaos, Vol 44, No 10, October 1997, pp. 882-890.
9. Goris M, Gray D and Mareels I, Reducing the computational load of a Kalman Filter, Electronics Letters, August, 1997, Vol 33, No 18, pp 1539-1541.
10. Nesic D, Mareels I, Bastin G and Mahony R, Output Dead Beat Control for a Class of Planar Polynomial systems, SIAM Journal on Control and Optimization, Vol 36, Jan 1998, pp 253-272.
11. Kershaw D and Evans R, Waveform selective probabilistic data association, IEEE Transactions on Aerospace and Electronic Systems, Vol 33, pp 1180-1188, October, 1997.
12. Skafidas E, Fradkov A, Evans R and Mareels I, Trajectory Approximation Based Adaptive control for nonlinear systems undermatching conditions, Automatica, Vol 34, No 3, pp287-299, 1998.
13. Nesic D and Mareels I, Dead Beat Controllability of Polynomial systems: Symbolic Computation Approaches, IEEE Trans Automatic Control, Feb 1998, Vol 43, No 2, pp 162-175.
14. Z.Li and R.Evans, Minimum Variance Control of Linear Time-Varying Systems Automatica, October 1997, pp 1531-1537.
15. Abed-Meraim K, Qiu W and Hua Y, Blind system identification, Proceedings of the IEEE, Vol. 85, No. 8, pp. 1310-1322, August, 1997.
16. Brushe G, Krishnamurthy V and White L, A reduced complexity on-line state sequence and parameter estimator for superimposed convolutional coded signals, IEEE Transactions Communications, Vol 45, No 12 pp 1565-1574, December, 1997.
17. Krishnamurthy V and Elliott R J, Exact Finite Dimensional Filters for Doubly Stochastic Auto-regressive Processes, IEEE Trans. Automatic control, Vol 42 No 9, pp 1289 -1293, September 1997.
18. Logothetis A and Kirshnamurthy V, De-interleaving of Quantized AR Processes with Amplitude Information, IEEE Trans Signal Processing, pp 1344-1350, May 1998.
19. Elliot R and J Krishnamurthy V, Exact Finite Dimensional Filters for Maximum Likelihood Parameter Estimation of Continuous-time Linear Gaussian Systems, SIAM Journal on Control and Optimization, Vol 35, No 6, November 1997 pp 1908-1923.

20. Krishnamurthy V and Ryden T, Consistent estimation of linear and non-linear autoregressive models with Markov regime, Journal of Time Series Analysis, Vol 19, No 3, pp 291-308, May 1998.
21. S.Aralumpalam, R.Evans, K.Ben-Lataief, Performance of HMM Tracking Algorithms using Importance Sampling, IEEE Trans. Signal Processing, March 1998, pp 720-736.
22. Krishnamurthy V and Evans J, Covert Tracking of Markov Jump Linear Systems, Automatica, Vol 34, No 5, May 1998.
23. Sarunic P and Evans R, Adaptive Update Rate Tracking using IMM-Nearest neighbour with Rapid Re-looks, IEE Proceedings Radar, Sonar and Navigation, August 1997, pp 195-204.

Conferences

1. D Nesic and Mareels I, On some triangular structures and the state dead-beat control problem for polynomial systems, American Control Conference '97, Albuquerque, USA, Vol 3, pp 1833-1837, June 1997
2. D Nesic and Mareels I, Stability of high order implicit polynomial dynamics and minimum phase discrete-time systems, European Control Conference, WE-A-J-2, Brussels, July 1-4, 1997
3. D Nesic and Mareels I, An output deadbeat controllability test for a class of odd polynomial systems, European Control Conference, WE-A-J-6, Brussels, July 1-4, 1997
4. D Nesic and Mareels I, Scalar polynomial systems, triangular structures and dead beat controllability, 2nd Asian Control Conference, Seoul, Korea, July 1997, pp353-356
5. Skafidas E, Savkin A, Evans R and Petersen I, Robust stabilization via state feedback controller switching 2nd Asian Control Conference, Seoul Korea, pp 235-238, July 1997
6. Skafidas E, Evans R Fradkov A, Relaxing matching conditions in trajectory based nonlinear adaptive control 2nd Asian Control Conference, Seoul, Korea, pp 349-352, July 1997
7. H Nijmeijer and Mareels I, On the controlled synchronisation of dynamical systems, 2nd Asian Control Conference, Seoul, Korea, 22-25 July 1997, pp 357-360

8. Skafidas E, Evans R J and Mareels I, Optimal controller switching for stochastic systems, IEEE Conference on Decision and Control '97, San Diego, US, pp 3950-3955, December 1997
9. Lim E and Mareels I, Identification effort for local maps in a chaotic system, IEEE Conference on Decision and Control '97, pp1443-1448, San Diego, USA, Dec 1997.
10. Netic D, Skafidas E, Mareels I and I Evans R, Analysis of minimum phase properties for non-affine nonlinear systems, IEEE Conference on Decision and Control '97, pp 606-611, San Diego, USA, Dec 1997.
11. Polderman J and Mareels I, The pole zero cancellation problem in adaptive pole placement revisited, European Control Conference, Brussels, ECC 412 1 of 5, (CDRom)Jul 1997.
12. Netic D and Mareels I, Symbolic Computation based controller design for polynomial systems, Control 97, pp 115-120, Sydney, Australia.
13. Netic D, Skafidas E, Mareels I and Evans R, A case study of minimum phase nonlinear systems, a new challenge, Control '97, pp 121-126, Sydney, Australia, October 1997
14. Abed-Meraim K, Hua Y and Belouchrani A, Minimum noise subspace: concepts and applications, International conference on information, communications and signal processing, pp 118-121, vol. 1, Singapore, September 1997
15. Abed-Meraim K and Hua Y, Joint Schur decomposition: algorithms and applications, International conference on information, communications and signal processing, Singapore, September 1997.
16. Cheng Q and Hua Y, Sensor gain and phase estimation, 31st Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, California, pp 274-278, November, 1997
17. Cheng Q and Hua Y, Detection of vapor emitting sources, 31st Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, California, pp. 864-866, November, 1997.
18. Miao Y and Hua Y, Fast subspace tracking by a novel information criterion, 31st Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, California, pp 1312-1316, November 1997
19. Abed-Meraim K and Hua Y, 3-D source localization by second order statistics, 31st Asilomar Conference on Signals, Systems, and Computers Pacific Grove, California, November, 1997. pp. 1307-1311

20. Abed-Meraim K and Hua Y, Multi-line fitting and straight edge detection using polynomial phase signals, 31st Asilomar Conference on Signals, Systems, and Computers, California, November, 1997. pp. 1720-1724,
21. Ikram M Z, Siddiqui N A and Hua Y, Design and implementation of IIR filters in STLC7545 analog front-end for voice communications, IEEE TENCON'97, Brisbane, Australia, pp 65-67, December 1997.
22. Pham M H Hua Y and Gray N, Imaging the solidification of molten metal by eddy current, Second Australian Workshop on Signal Processing Applications, pp. 235-238, Brisbane, December, 1997.
23. Abed-Meraim K and Hua Y, Knowledge based identification of sparse multipath channels, Second Australian Workshop on Signal Processing Applications, pp. 127-130, Brisbane, December, 1997.
24. Ikram M Z, Belouchrani K, Abed-Meraim K and Hua Y, Interference excision of non-stationary signals in spread spectrum communications, Second Australian Workshop on Signal Processing Applications, pp 207-310, Brisbane December 1997
25. Zhu C and Hua Y, Optimized feature map finite state vector quantization for image coding, Second Australian Workshop on Signal Processing Applications, pp. 55-58, Brisbane, December, 1997
26. Miao Y and Hua Y, Fast subspace tracking and neural network learning by a novel information criterion, Second Australian Workshop on Signal Processing Applications, pp. 223-226, Brisbane, December, 1997.
27. Abed-Meraim K and Hua Y, A least-squares approach to joint Schur decomposition, Vol. 4, pp. 2541-2544, IEEE ICASSP'98, Seattle, WA, USA, May, 1998.
28. Miao Y and Hua Y, Fast subspace tracking and neural network learning by a novel information criterion, IEEE ICASSP'98, Seattle, WA, USA, Vol. 2, pp. 1197-1200, May, 1998.
29. Manton J, Hua Y, Zheng Y and Zhang C, Semi-blind identification of finite impulse response channels, Vol. 4, pp. 2369-2372, IEEE ICASSP'98, Seattle, WA, USA, May, 1998.
30. Davis L, Collings I B and Evans R J, Estimation of LEO Satellite Channels ICASSP 97, Singapore, Vol 1, pp 15-19, September 1997
31. Ding Z, Collings I B and Liu R W, A New Blind Zeroforcing Equalizer for Multichannel Systems, ICASSP 98, Seattle, VI, pp 3177-3180, May 1998

32. Collings I B and Ryden T, A New Maximum Likelihood Gradient Algorithm for On-line Hidden Markov Model Identification ICASSP 98, Seattle, IV, pp 2261-2264 May 1998
33. Krishnamurthy V and Ryden T, Consistency of the MLE for Jump Markov AR Systems, IEEE Conf on Decision and Control, San Deigo USA pp 3401-3406, Dec 1997
34. Logothetis A and Krishnamurthy V, Model Trajectory Estimation for Jump Markov Linear Systems iva the Expectation Maximization Algorithm, IEEE Conf on Decision and Control, San Deigo USA pp 1700-1705,, Dec 1997
35. Evans J and Evans R, State estimation of Markov switching systems with modal observations IEEE Conf on Decision and Control, San Deigo USA pp 1688-1693, Dec 1997
36. Nair G and Evans R, State estimation via a capacity limited commiunication channel, IEEE Conf on Decision and Control, San Deigo USA pp 866-871, Dec 1997
37. Elliot R J and Krishnamurthy V, Finite dimensional Filters for Maximum Likelihood ESTimation of Linear Gauss-Markov Models, IEEE Conf on Decision and Control, San Deigo USA pp 1637-1642, Dec 1997
38. Elliot R J and Krishnamurthy V, Optimal Finite Dimensional Filters for Maximum Likelihood Parameter Estimation of Continious-time Linear GaussiAn Systems, IEEE Conf on Decision and Control, San Deigo USA pp 4469-4474, Dec 1997
39. Krishnamurthy V and Elliott R J, Exact finite dimensional Filters for certain Exponential Functionals of Gaussian State-Space Processors, IEEE Conf on Decision and Control, San Deigo USA pp 1651-1656, Dec 1997
40. Logothetis A, Isaksson A Evans R, An information theoretic approach to observer path design for bearings only tracking IEEE Conf on Decision and Control, San Deigo USA pp 1443-1448 , Dec 1997
41. Logothetis A, Krishnamurthy V, Holst J and Isaksson R, Model State Estimation of a Maneuvering Target in Clutter, IEEE Conf on Decision and Control, San Deigo USA pp 5024-5029, Dec 1997
42. Evans J and Krishnamurthy V, Recursive Nonlinear Estimation of Random Parameter AR Models with Poisson Observation, IEEE Conf on Decision and Control, San Deigo USA pp 5042-5047 ,Dec 1997
43. Manton J, Krishnamurthy V and Poor H V, Robust estimation - the James-Stein Kalman filter, IEEE Conf on Decision and Control, San Deigo USA pp 3454-3459 , Dec 1997

44. Krishnamurthy V and Ryden T, Consistency of the MLE for jump Markov linear systems IEEE Conf on Decision and Control, San Deigo USA pp 3401-3406 , Dec 1997
45. Charalambous C D, Elliott R J and Krishnamurthy V, Conditional Moment Generating Functions for Integrals and Stochastic Integrals IEEE Conf on Decision and Control, San Deigo USA pp 3944-3949 , Dec 1997
46. Abed-Meraim K Hua Y and Belouchrani A, Super-fast Noise Subspace Computation: Application to Array Calibration and DOA Estimation 15th Annual Benjamin Franklin Symposium, Philadelphia, PA, USA, pp. 50-53
47. Logothetis A, Krishnamurthy V, and Soderlund A, A Hybrid ECME Algorithm for Errors-in-Variables Models, World Automation Congress WAC'98, Anchorage, Alaska, May 1998
48. S. Challa and F. A. Faruqi
Application of Chebyshev's inequality theorem in the design of optimal nonlinear filters,
International Conference on Acoustics, Speech and Signal Processing, ICASSP '98, April 1998, San Diego, U.S.A.

Details to follow

- Pulford G W and A Logothetis, An Expectation-Maximisation Tracker for Multiple Observations of a Single Target in Clutter, Proc 36th Conference on Decision & Control, San Diego, pp. 4997-5003, Dec 1997.
- S F A Faruqi, An application of Chebyshev's inequality theorem in the design of optimal nonlinear filters, IEEE ICASSP'98, Seattle, Washington, USA, Vol 3, pp 1277-1280, May 1998.
- Krishnamurthy V, Johnston L and Logothetis A, Optimal MAP Estimation of Bilinear Systems via the EM Algorithm, IEEE ICASSP 98, pp 2373-2376, Seattle USA, May 1998
- Evans J and Krishnamurthy V, Optimal Sensor Scheduling for Hidden Markov Models, IEEE ICASSP'98 pp 2161-2164, Seattle USA, May 1998
- Carlemalm C, Krishnamurthy V and Dogancay K, Algorithms for Blind Detection of Equalization Errors in Hidden Markov Model Channels, IEEE ICC'98, Atlanta, USA pp 324-328 June 1998
- Evans J and Krishnamurthy V, Hidden Markov Model Filtering over a Packet Switched Network, IEEE ICC'98, Atlanta, USA pp 1779-1783 June 1998

- Krishnamurthy V and Poor H V, Finite Dimensional Filters for Nonlinear Functionals of Gauss-Markov Processes WAC'98, Anchorage, Alaska, CD ISIAC 187.1-6, May 1998
- Johnston L and Krishnamurthy V, A Recursive Prediction Error Algorithm for Narrowband Interference Suppression in Spread Spectrum Systems IEEE International Conference on Communications ICC'98, pp 733-737 Atlanta, USA June 1998

Accepted for Publication

1. Cheng Q and Hua Y, Consistency of two detection techniques using single measurement of data Signal Processing, Vol. 66, No. 1, 1998
2. Evans J and Evans R, Image Enhanced Tracking Signal Processing
3. Elliot R, Krishnamurthy V and Manton J, Discrete time filter for a doubly stochastic poisson process, Systems and Control Letters
4. Pulford G and Evans R, A Multipath Probabilistic Data Association Tracker for Over-the-Horizon Radar IEEE Trans Aerospace and Electronic Systems, October, 1998
5. Skafidas E, .Evans R J , Savkin A and Petersen I, Stability Theory for Switched Controller Systems , Automatica
6. Skafidas E, Evans R J and Percival J, Ionospheric Prediction, IEEE Trans. Aerospace and Electronic Systems,
7. Davis L, Collings I, Evans R, Identification of Time-Varying Linear Channels IEEE Trans Comm
8. Hua Y and Liu W, Generalized Karhunen-Loeve Transform, IEEE Signal Processing Letters, to appear in June 1998.
9. Krishnamurthy V and Logothetis A, Adaptive Nonlinear Filters for Narrowband Interference Suppression in Spread Spectrum CDMA, IEEE Trans. Communications 1998
10. Evans J Krishnamurthy V, Exact filters for doubly stochastic AR models with conditionally Poisson observations IEEE Transactions on Automatic Control,
11. Elliott R J Krishnamurthy V, New Finite dimensional Filters for EStimation of Linear Gauss-Markov Models, IEEE Transactions on Automatic Control,

12. Elliot R J and Krishnamurthy V, Exact Finite Dimensional Filters for Exponential Functionals of the State in Stochastic Analysis, Control, Optimization and Applications: A Volume in Honor of W H Fleming, Edited by W M McEneaney, G Yin and Q Zhang, Birkhauser, Boston, 1998
13. Homer J, Bitmead R and Mareels I, Quantifying the effects of dimension on the convergence rate of the LMS adaptive FIR estimator, IEEE Transactions on Signal Processing, 1998
14. Homer J, Mareels I, Bitmead R, Wahlberg B and Gustafsson F, LMS estimation via structural detection, IEEE Transactions on Signal Processing, 1998.

Technical Reports

- Manton J Muscatelli A Krishnamurthy V Hurn S, Modelling Stock Market Excess Returns by Markov Modulated Gaussian Noise, Discussion Papers in Economics No 9806 Department of Economics, University of Glasgow
- Pulford G W and La Scala B F, [Over-The-Horizon Radar Tracking Using The Viterbi Algorithm](#) - Second Report to High Frequency Radar Division CSSIP Report No. 16/95, August 1995.
- Pulford G W and La Scala B F, [Over-The-Horizon Radar Tracking Using The Viterbi Algorithm](#) - Third Report to High Frequency Radar Division, CSSIP Report No. 27/95, December 1995.
- La Scala B F and Pulford G W, [Software Specification for the Viterbi Data Association Tracker for OTHR](#), CSSIP Report No. 12/96 to High Frequency Radar Division, May 1996.
- Pulford G W and La Scala B F, [A Survey of Manoeuvring Target Tracking Methods and their Applicability to Over-The-Horizon Radar](#), CSSIP Report No. 14/96 to High Frequency Radar Division, July 1996.
- La Scala B F and Pulford G W, [An Analysis of Manoeuvring Target Detectors and Trackers for Over-The-Horizon Radar](#), CSSIP Report No. 29/96 to High Frequency Radar Division, November 1996.
- La Scala B F and Pulford G W, [Implementation of a Viterbi Data Association Tracker for Manoeuvring Targets in Over-the-Horizon Radar](#), CSSIP Report 12/97 to High Frequency Radar Division, May 1997.

- Pulford G W and La Scala B F, [Multiregion Viterbi Data Association Tracking for Over-the-Horizon Radar](#) CSSIP Report CR20/97 to High Frequency Radar Division, Oct. 1997.
- La Scala B F and Pulford G W, [Multipath Target Tracking with Uncertain Co-ordinate Registration Advice - Solution Approaches](#), CSSIP Report CR24/97 to Wide Area Surveillance Division, Dec. 1997.
- Pulford G W, [Multipath Data Association Tracker with Uncertain Co-ordinate Registration for Over-the- Horizon Radar - Software Specification](#), CSSIP Report to Wide Area Surveillance Division, June 1998.
- Kennedy H L and Pulford G W, [Multipath Data Association Tracker with Uncertain Co-ordinate Registration for Over-the- Horizon Radar - Software Implementation](#), CSSIP Report 37/98, Oct 1998.
- Pulford G W, [OTHR Multipath Tracking with Uncertain Co-ordinate Registration](#), CSSIP Report 38/98, Dec 1998.

Presentations

- R Evans, Integrated Control Estimation and Information for C3I system, AEEMA C3I Research Forum Canberra, March 1998
- R Evans, Integrated Control Estimation and Information for C3I system, Tenex Ltd, Victoria April 1998
- R Evans, Integrated Control Estimation and Information for C3I system, RLM Ltd, Victoria, April 1998
- G Pulford, Tracking Activities at CSSIP/University of Melbourne Telstra Applied Technologies (Jindalee Project), Sept. 1997.
- I Mareels , Stabilisation and identification of chaotic dynamics Institute of Mathematics and its Applications, May 1998, Minneapolis, USA.
- I Mareels , Stabilisation and identification of chaotic dynamics United Technologies Research Centre, June 1998, Hartford, USA.
- B La Scala, Over-the-Horizon Radar Tracking Using the Viterbi Algorithm HFRD, DSTO, Dec 1995.
- B La Scala, Tracking Manoeuvring Targets - A Survey HFRD, DSTO, August 1996.
- B La Scala, An Analysis of Manoeuvring Target Detectors and Trackers for Over-the-Horizon Radar, HFRD, DSTO, Dec 1996.

- B La Scala, Hidden Markov Model Tracking Study for Over-the-Horizon Radar, CSSIP Advisory Board Meeting, 1997.
- B La Scala, The Viterbi Data Association Tracker Final contract presentation to WASD, DSTO, 20 Nov 1997.