

CURRICULUM VITAE II: Publications

Books

P.E. Caines, **Linear Stochastic Systems**, John Wiley NYC., xiv + 874 pp. April 1988.

D. Brillinger, P. E. Caines, J. Gweke, E. Parzen, M. Rosenblatt, M. S. Taqqu, Eds, **New Directions in Time Series Analysis, Parts I and II**, The IMA Volumes in Mathematics and Its Applications, Vols. 45 and 46, Springer-Verlag, NYC, 1992 and 1993.

L. Gerencsér and P.E. Caines, Eds: **Topics in Stochastic Systems: Modelling, Estimation and Adaptive Control**, Springer Verlag, Heidelberg, 1991.

P.E. Caines and R.Hermann, Eds: **Geometry and Identification: Proceedings of the First APSM Workshop on System Geometry, System Identification and Parameter Estimation**, Math. Sci. Press, Brookline, Mass., April 1983.

Publications in Journals and Books

1. M. S. Shaikh and P.E.Caines, "On the Hybrid Optimal Control Problem: Theory and Algorithms". *IEEE Trans. on Automatic Control*; Vol. 52. No. 9, September, 2007, pp 1587 - 1603.
2. M.Y. Huang, P.E. Caines and R.P. Malhamé, "Large Population Cost-Coupled LQG Problems with Non-uniform Agents: Individual-Mass Behaviour and Decentralized ϵ - Nash Equilibria". *IEEE Trans. on Automatic Control*; Vol. 52. No. 9, September, 2007, pp 1560 - 1571.
3. M.Y. Huang, P.E. Caines and R.P. Malhamé, "An Invariance Principle in Large Population Stochastic Dynamic Games," in "The 6th International Workshop on Frontier Problems in Systems and Control ,Optimization, Identification and Control on the Occasion of Han-Fu Chen's 70th Birthday." *Journal of Systems Science and Complexity*, June, 2007, Vol. 20, pp 162 - 172.
4. P. E. Caines, R. Deardon and H. P. Wynn, "Bayes nets of time series: stochastic realisations and projections". *H. P. Wynn Festschrift; Proceedings of the Workshop on Optimum Design and Related Statistical Issues ; Juan Les Pins, France, May, 2005*. Eds. L. Pronzato et. al., Springer, Berlin, 2007.
5. H. Zhang, W Ge, W. S. Wong and P. E. Caines, "A Stochastic Approximation Approach to the Power Control Problem". *IEEE Trans. on Communications*, Vol 55, No. 5, May, 2007, pp 878 - 886.

6. I. Romanovski, and P. E. Caines, "On the Supervisory Control of Multi-Agent Product Systems: Controllability Properties". *Systems and Control Letters*, 56, 2, February, 2007, pp 113 - 121.
7. M.Y. Huang, R.P. Malhamé and P.E. Caines, "Large Population Stochastic Dynamic Games: Closed Loop McKean-Vlasov Systems and the Nash Certainty Equivalence Principle". Special issue in honour of the 65th birthday of Tyrone Duncan, *Communications in Information and Systems*. Vol 6, Number 3, 2006, pp 221 - 252.
8. M.Y. Huang, P.E. Caines and R.P. Malhamé, "Large Population Stochastic Dynamic Games: the Nash Certainty Equivalence Principle and Adaptation". *Forever Ljung in System Identification*, Eds. T. Glad and G. Hendeby, Studentlitteratur, Lund, Sweden, October, 2006, pp 35 - 60.
9. I. Romanovski, P. E. Caines "On the Supervisory Control of Multi-Agent Product Systems". *IEEE Trans. on Automatic Control*, Vol 51, No. 5, May 2006, pp 794 - 799.
10. P. E. Caines, Shaikh M. S, "Optimality Zone Algorithms for Hybrid Systems: Efficient Algorithms for Optimal Location and Control Computation". *Hybrid Systems: Computation and Control, LNCS 3927*, Proceedings of the 9th International HSCC Workshop, CA. Eds J. P. Hespanha and A. Tiwari, Springer-Verlag, Berlin; March, 2006, pp 123 - 137.
11. M.Y. Huang, P.E. Caines and R.P. Malhamé, "Degenerate Stochastic Control Problems with Exponential Costs and Weakly Coupled Dynamics: Viscosity Solutions and a Maximum Principle". *SIAM J. Control and Optimization*, Vol. 44, No.1, June - August, 2005, pp 367 - 387.
12. M.Y. Huang, R.P. Malhamé and P.E. Caines, "Nash Equilibria for Large-Population Linear Stochastic Systems with Weakly Coupled Agents", in *Analysis, Control and Optimization of Complex Dynamic Systems*, Eds. E.K. Boukas, R. P. Malhamé, GERAD 25th Anniversary Series, Springer, 2005, pp 215 - 252.
13. M.Y. Huang, R.P. Malhamé and P.E. Caines, "Computationally tractable stochastic power control laws in wireless communications". *IEEE Trans. on Automatic Control*, Vol. 50, No. 2, February, 2005, pp 263 - 268.
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16. Shaikh M. S. and Caines P.E., "On the Optimal Control of Hybrid Systems: Optimization of Trajectories, Switching Times and Location Schedules". *Hybrid Systems: Computation and Control, LNCS 2623*, Proceedings of the 6th International HSCC Workshop, Prague, 3 - 5 May, 2003. Eds. O. Maler, A. Pnueli. Springer Verlag, 2003, pp 466 - 481.

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21. P. Hubbard and P. E. Caines, "Trace-DC Hierarchical Supervisory Control". *IEEE Trans. on Automatic Control*, Vol. 47, No. 1, January, 2002, pp 1 - 16.
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Conference Publications and Presentations

1. P. Caines, M. Egerstedt, R. Malhamé and A. Schoellig, “A Hybrid Bellman Equation for Bimodal Systems. Hybrid Systems: Computation and Control”, A. Bemporad, A. Bicchi, and G. Buttazzo. Springer-Verlag, LNCS 4416, Pisa, Italy, April 2007, pp. 656-659, (<http://users.ece.gatech.edu/magnus/Papers/BellmanHSCC07.pdf>)
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3. M.Y. Huang, P.E. Caines and R.P. Malhamé, “An Invariance Principle and Entry Adaptation in Large Population Stochastic Dynamic Games,” *IEEE Conference on Decision and Control*, New Orleans, LA, 12 - 14 Dec. 2007, pp 121 - 126.
4. Z. Ma, P. E. Caines, R. P. Malhamé, “Distributed Control of Loss Networks Systems: Independent Subnetwork Behaviour in Infinite Networks” *IEEE Conference on Decision and Control*, New Orleans, LA, 12 - 14 Dec. 2007, pp 4421 - 4426.
5. Z. Ma, P. E. Caines, R. P. Malhamé, “Stochastic Control of Network Systems I: NETCAD State Space Structure & Dynamics” . *45th IEEE Conference on Decision and Control*, San Diego December, 2006, pp 2577 - 2582.
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8. M.Y. Huang, R.P. Malhame and P.E. Caines, “ Nash Certainty Equivalence in Large Population Stochastic Dynamic Games: Connections with the Physics of Interacting Particle Systems”, *45th IEEE Conference on Decision and Control*, San Diego December, 2006, pp 4921 - 4926.
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1. Caines P. E., "On the Supervisory Control of Multi-Agent Product Systems", *Mathematical Models and Techniques for Analysing Systems*, Organizer: P. Panangaden, CRM, Montreal, 30 September - 4 October, 2002.
2. Caines P. E., R. Deardon and H. P. Wynn, "Conditional Orthogonality and Conditional Stochastic Realization". Presented at the meeting *DAS: Dynamics, Algebra and Statistics*, (co-sponsored by the Warwick RISC Initiative and the London Mathematical Society), Department of Statistics, University of Warwick, UK, 16 - 17 September, 2002.
3. Caines P. E., R. Deardon and H. P. Wynn, "Conditional Independence and General Factorizations in Time Series Graphical Models". Presented at the *Eurandom Meeting on Multivariate Processes and Bayesian Nets*, Eindhoven, 1 - 2 February, 2002.