

ALESSANDRO CHIUSO: Curriculum Vitae

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General Information

Name: Alessandro Chiuso
Date and place of birth: December 21st, 1972, Venezia
Home Address: Via Caltana 41/a, 30034 Mira (VE)
e-mail: chiuso@dei.unipd.it
web: <http://www.dei.unipd.it/~chiuso>

Position

Associate professor with the Dipartimento di Tecnica e Gestione dei Sistemi Industriali, University of Padova since March 1st, 2006.

Previous positions

- March 1st 2001, February 28th 2006, Researcher (Assistant Professor), Dept. of Information Engineering, University of Padova.
- July 2001: Visiting Researcher, University of California Los Angeles.
- March 1st, 2000- February 28th, 2001: Research associate (“Assegnista di ricerca”) with the Dept of Information Engineering, Univeristy of Padova.
- March 1st, 2000-July 31, 2000: EU-TMR Post-Doc fellow with the Dept. of Mathematics, Royal Institute of Technology (KTH), Stockholm, Sweden.
- August 1998-June 1999: Visiting Research Scholar, Washington University St. Louis.

Degrees

- Ph.D. Degree (Dottorato di ricerca) in System Engineering February 2000, University of Bologna. Thesis: “Geometric Methods for Subspace Identification”.
- Laurea Degree (equivalent to a Master Degree) in Telecommunication Engineering (summa cum laude), University of Padova, July 7th, 1996 (thesis: Image reconstruction from projections).

Organization of scientific events

- Co-Organizer (with Dr. A. Cenedese and Dr. G. Pillonetto) of the annual SIDRA (Italian Association of Automatic Control) workshop. September 11-13, 2008. Department of Management and Engineering, University of Padova, Vicenza, Italy.
- Co-Organizer (with Prof. A. Ferrante and Prof. S. Pinzoni) of the workshop: Modeling, Estimation and Control: A Symposium in honor of Giorgio Picci on the occasion of his 65-th birthday. October 4-5, 2007, Scuola Grande di S. Giovanni Evangelista, Venice, Italy.
- Local Co-Organizer of the ERNSI (European Research Network System Identification) workshop. October 1-3, 2007, San Servolo, Venice, Italy

- Co-Organizer (with Prof. L. Schenato and Prof. S. Zampieri) of the invited session " *Distributed Estimation over Sensor Networks*", *IEEE Conf, on Dec. and Control*, 2007 , New Orleans, USA.
- Co-Organizer (with Prof. S.J. Qin) of the invited session " *New Developments in Closed-Loop Identification*", IFAC SYSID (International Symposium on System Identification), Newcastle, Australia, March 2006.
- Organizer of the invited session " *New results in closed-loop identification*", 16th IFAC World Congress, Prague, 2005.
- Organizer of the Minisymposium " *Identification and Control in Computer Vision*", Mathematical Theory of Network and Systems (MTNS) 2004, Leuven, Belgium
- Co-organizer (with Proff. T. Katayama e G. Picci) of the invited sessions " *New results in subspace identification* " and " *Subspace identification and applications* " 13th IFAC Symposium on System Identification, SYSID 2003, Rotterdam.
- Organizer of the tutorial " *Dynamical Systems methods in Computer Vision*", *European Conference in Computer Vision*, Copenhagen, June 2002.

Honors

- IEEE Senior member (2006)
- Outstanding reviewer, *Automatica* (2007)
- Outstanding reviewer, *IEEE Transactions on Automatic Control* (2009)

Editorial Boards

- Associate editor of *European Journal of Control*, (starting officially January 2011).
- Associate editor of *IEEE Transactions on Automatic Control*, January 2010 - present.
- Associate editor of *Automatica*, December 2008 - present.
- Member of the Editorial Board of *IET Control Theory and Applications* (former *IEE Proceedings of Control Theory & Applications*), March 2007 - present.
- Member of the *IEEE CSS Conference Editorial Board*, July 2004 - 2009.

Technical Committees

- Member of the *IFAC Technical Committee on Modeling, Identification and Signal Processing*.
- Member of the *IEEE CSS Technical Committee on System Identification and Adaptive Control*.

Program Committees of International Conferences

- *IFAC SYSID 2012*, Brussels, Belgium.
- Mathematical Theory of Network and Systems (MTNS) 2010, Budapest, Hungary.
- *CDC 2009*, Shanghai, Cina, December 2009.
- International Conference on Informatics in Control, Automation and Robotics (ICINCO 2009).

- *IFAC SYSID 2009*, S. Malo, France, July 2009.
- *CDC 2008*, Cancun, Mexico, December 2008.
- *CDC 2007*, New Orleans, USA, December 2007.
- Mediterranean Control Conference (MED) 2006, Ancona, Italy.
- Mathematical Theory of Network and Systems (MTNS) 2006, Kyoto, Japan.
- CDC-ECC'05, Sevilla, Spain, December 2005.
- Mathematical Theory of Network and Systems (MTNS) 2004, Leuven, Belgium.

Reviewing

- Past Reviewer of “Mathematical Reviews” of the *American Mathematical Society*.
- Reviewer for several International Journals (*IEEE TAC*, *IEEE TCST*, *IEEE TIT*, *IEEE TCAS-I*, *IEEE TCAS-II*, *IEEE PAMI*, *IEEE TSP*, *Automatica*, *Int. J. Control*, *Int. J. Adapt. Cont. and Sign. Proc.*, *J. Time Series Anal.*, *J. of Complexity*, *J. of Multiv. Anal., Syst. & Cont. Lett.*, *Asian J. Control*, *Asia Pacific Journal of Control*, *Computer Vision and Image Understanding*) and Conferences in the fields of Automatic Control, Statistical Time Series Analysis and Computer Vision.

Invited Talks and Seminars

- “Bayesian Techniques in System Identification”, ERNSI workshop, Pembroke College, Cambridge, September 2010.
- “Gaussian processes for identification of sparse, Large-scale linear systems”, Dept. of Computer Science, University of California Los Angeles, August 2010.
- “Some Identification Techniques in Computer Vision”, Invited Tutorial Presentation, *IFAC ROCOND Symposium*, Haifa, Israel, June 2009.
- “Some Identification Techniques in Computer Vision”, Invited Tutorial Presentation, *IEEE Conf. on Decision and Control*, Cancun, Mexico, Dec. 2008.
- “An overview of recent results in subspace identification” (1 hour), Dept. of Mathematics, Royal Institute of Technology, May 11th 2007, Stockholm, Sweden.
- “Recent advances in subspace identification” (1 hour), ERNSI Workshop - September 21st, 2006, Linkoping (Sweden).
- “Recent advances in subspace identification” (1 hour), Dept. of Electrical Engineering, University of Melbourne, April 8th, 2006, Melbourne (Australia).
- “Recent advances in subspace identification” (1 hour), Dept. of Chemical Engineering, University of Texas at Austin, May 30th, 2005, Austin (TX), USA.
- “Tutorial on Subspace Identification” (3 hours), Dept. of Chemical Engineering, University of Texas at Austin, May 29th, 2005, Austin (TX), USA.
- “Stochastic Realization with Inputs and Subspace Identification” (1 hour), Division of Optimization and System Theory, Dept. of Mathematics, Royal Institute of Technology, March 2000. Stockholm, Sweden.

Research: brief description

The research activity of Alessandro Chiuso has focused mainly in Identification and Estimation theory for dynamical systems and its application to Computer Vision problems.

In the area of identification and estimation his main contributions concern subspace identification methods. He has studied the numerical properties of most well known methods, pointing at possible remedies in difficult situations where the underlying regression problems turn out to be ill-conditioned. These “difficult situations” have been characterized in terms of the system/input-spectrum relation; also the link of ill-conditioning with asymptotic variance of the estimators has been shown. This has been possible thanks to new and more explicit formulas for the asymptotic variance of subspace estimators which have been derived both for classical algorithms and for more recent ones. The most recent activities concern extension of subspace methods to closed-loop operating conditions and comparison (relative performance) of subspace methods, both for open and closed-loop experimental conditions.

Some work has also been devoted to:

- observability of linear hybrid systems
- estimation for systems which state space evolves on some special differential manifolds (\mathcal{S}^n , $SO(n)$, etc.); this was originally motivated by vision problems;
- identification of non-linear systems using RKHS methods.
- Networked Control Systems: distributed estimation over sensor networks (distributed Kalman filtering), synchronization, identification using large data sets from sensors networks.
- modeling and control of adaptive optics systems

In the area of computer vision he has studied several aspects related to motion and scene reconstruction from monocular vision, as well as modeling and analysis of complex visual phenomena. These include:

- A mathematical analysis of the perception of visual motion, that encompassed known visual illusions and allowed the detection and classification of all local minima in visual reconstruction.
- Development of the first ever general-purpose vision front-end for control applications. The system, featured in the July 11 2000 issue of the EE Times, consists in a body of hardware, software and algorithms that allows estimating the three-dimensional motion and point-wise structure of a moving scene with a single camera in real-time, with no prior information about the shape and motion of the scene, except for its rigidity. This system represents the first case of a causal algorithm implemented in real-time, and has been made available for academic use via the Internet.
- Application of identification techniques to modeling of complex visual phenomena such as texture and gaits; these techniques have been proven effective for synthesis of synthetic scenes as well as might have high potential for model based recognition and classification tasks.
- A framework for inclusion of shape information in tracking and data association algorithms (e.g. JPDAF or MHT). It is shown how shape can either come from prior knowledge or be learned on-line from data.

Teaching

- *2009-2010* “System Identification and Data Analysis”
- *2008-2009* “Subspace System Identification” (PhD Course)
- *2007-2008* “Monte Carlo Methods” (PhD Course)

- *2006-2007* “Subspace System Identification” (PhD Course)
- *2005-2010* “Signals and Systems”
- *2003-2005* “Data Analysis” (Basic Probability and Statistics)
- *2001-2004* “System Identification and Data Analysis”

Teaching Assistantship:

- *2003-2004*, System Theory.
- *1997-2004*, System Identification and Data Analysis.
- *1999-2000*, Calculus II.
- *1998-1999*, Probability and Stochastic Processes (Washington University St. Louis)
- *1997-1998*, Electrical Communications.
- *1997-1998*, Automatic Control.

Other teaching:

- July 1999, Ph.D. classes on “Subspace Methods” e “Linear Algebra in Subspace Identification: QR, SVD, QSVD.”,
- Spring 2001, “Modeling and Control of Mechanical Systems” (with Proff. R. Frezza e G. Picci), for the company Salvagnini S.p.a. Vicenza.
- Fall 2001, “Identification Techniques” (with Prof. G. Picci) for the consulting company S.A.T.E. s.r.l., Venezia.

Publications

International Books

- [E.1]. A. Chiuso, A. Ferrante and S. Pinzoni (Eds.) (2007), “Modeling Estimation and Control, Festschrift in Honor of Giorgio Picci on the Occasion of his 65-th Birthday”. Springer Lect. Notes in Control and Information Sciences.
- [E.2]. A. Chiuso, L. Fortuna, M. Frasca, A. Rizzo, L. Schenato, S. Zampieri (Eds.) (2009). “Modeling Estimation and Control of Networked Complex Systems”. Springer complexity: understanding complex systems.

International Journals

- [A.1]. A. Chiuso, R. Brockett and S. Soatto (2000), “Optimal Structure From Motion: Local Ambiguities and Global Estimates”. *IJCV, International Journal on Computer Vision*, **39** (3), pp. 195-228.
- [A.2]. A. Chiuso, and G. Picci (2001). “Some Algorithmic aspects of Subspace Identification with Inputs”, *Int. Journal Applied Mathematics and Computer Sciences*, Vol. 11, No.1, pp. 55-75.
- [A.3]. A. Chiuso, P. Favaro, H. Jin and S. Soatto (2002). “Structure from Motion Causally Integrated over Time”. *IEEE Trans. on Pattern Analysis and Machine Intelligence* 24(4),pp. 509-522.
- [A.4]. G. Doretto, A. Chiuso, Y.N. Wu, S. Soatto (2003), “Dynamic Textures”. *Int. Journal of Computer Vision*, 51(2), 2003, pp. 91-109.
- [A.5]. A. Chiuso and G. Picci (2004), “Asymptotic Variance of Subspace Estimates”. *Journal of Econometrics*, 118(1-2), pp. 257–291.
- [A.6]. A. Chiuso, G. Picci (2004), “On the Ill-conditioning of subspace identification with inputs”. *Automatica*, 40(4), pp. 575–589, Regular paper.
- [A.7]. A. Chiuso, G. Picci (2004), “Numerical conditioning and asymptotic variance of subspace estimates”. *Automatica*, 40(4), pp. 677-683, Brief Paper.
- [A.8]. A. Chiuso, G. Picci (2004), “Subspace identification by data orthogonalization and model decoupling”. *Automatica*, 40(10), pp. 1689–1703, Regular paper.
- [A.9]. A. Chiuso, G. Picci (2004), “Asymptotic Variance of Subspace methods by data orthogonalization and model decoupling: a comparative study.”. *Automatica*, 40(10), pp. 1705–1717 , Regular paper.
- [A.10]. A. Chiuso, G. Picci (2005), “Consistency Analysis of some Closed-Loop Subspace Identification Methods”. *Automatica, Special Issue on System Identification*, March 2005 (41(3)), pp. 377–391, Special issue (regular) paper.
- [A.11]. A. Chiuso (2006), “Asymptotic Variance of Closed-Loop Subspace Identification Methods”. *IEEE Trans. on Automatic Control*, 51(8), pp. 1299-1314 (regular paper).
- [A.12]. A. Chiuso (2007), “The role of Vector AutoRegressive modeling in Predictor Based Subspace Identification”. *Automatica* 43(6), pp. 1034-1048 (regular paper).
- [A.13]. A. Chiuso (2007) “On the relation between CCA and predictor-based subspace identification” *IEEE Transactions on Automatic Control*, 52(10), pp. 1795-1812 (regular paper).
- [A.14]. A. Bissacco, A. Chiuso and S. Soatto (2007), “Classification and Recognition of Dynamical Models: The Role of Phase, Independent Components, Kernels and Optimal Transport”. *IEEE Trans. on Pattern Analysis and Machine Intelligence*, 29(11), pp. 1958-1972 (regular paper).

- [A.15]. R. Carli, A. Chiuso, L. Schenato and S. Zampieri (2008), “Distributed Kalman filtering using consensus strategies” *IEEE Journal on Selected Areas in Communications* 26(4), pp. 622-634 (regular paper).
- [A.16]. A. Chiuso, G. Picci, S. Soatto (2008), “Wide-sense Estimation on the Special Orthogonal Group” *Communications in Information and Systems*, 8(3), pp. 185-200.
- [A.17]. G. Pillonetto, A. Chiuso (2009), “Fast computation of smoothing splines subject to equality constraints” *Automatica*, 45(12), Pages 2842-2849 (brief paper).
- [A.18]. A. Chiuso, R. Muradore, E. Marchetti (2010), “Dynamic Calibration of Adaptive Optics Systems: A System Identification Approach” *IEEE Transactions on Control Systems Technology*, (brief paper).
- [A.19]. A. Chiuso (2010), “On the asymptotic properties of closed loop CCA-type Subspace Algorithms: equivalence results and choice of the future horizon” *IEEE Transactions on Automatic Control*, 55(3), pp. 634 - 649 (regular paper).
- [A.20]. G. Pillonetto, A. Chiuso, G. De Nicolao (2010), “Prediction error identification of linear systems: a Gaussian regression approach” *Automatica*, (regular paper) to appear.

Book Chapters

- [B.1]. A. Chiuso and G. Picci (1998) “Visual tracking of points as estimation on the unit sphere”, in *The Confluence of Vision and Control*, D. Kriegman, W. Hager, S. Morse (Eds.), Springer LNCIS 1998, pp. 91-104.
- [B.2]. A. Chiuso, H. Jin, P. Favaro and S. Soatto (2000). “MFm” : 3-D Motion and Structure from 2-D Motion Causally Integrated Over Time: Implementation. In *Computer Vision - ECCV 2000*, D. Vernon ed., Lect. notes in Computer Science 1843, pp. 734-750.
- [B.3]. A. Chiuso, G. Picci (2002), “Geometry of Oblique Splitting, Minimality and Hankel Operators”. in *Directions in Mathematical Systems Theory and Optimization*, A. Rantzer and C. Byrnes eds. Springer Lect. Notes in Control and information Sciences, **286**, pp. 85-124 (2002).
- [B.4]. R. Vidal, A. Chiuso, S. Soatto and S. Sastry (2003) “Observability Linear Hybrid Systems” In *Hybrid Systems: Computation and Control*, Lecture Notes in Computer Science 2623, pp. 526-539.
- [B.5]. Saisan, P., A. Bissacco, A. Chiuso and S. Soatto (2004). “Modeling and synthesis of facial motion driven by speech”. In: *Computer Vision - ECCV 2004*, T. Pajdla and J. Matas eds., Lect. notes in Computer Science 3023, pp. 453-467.
- [B.6]. A. Masiero, A. Chiuso (2006) “Non linear temporal textures synthesis: a Monte Carlo approach” in *Computer Vision - ECCV 2006, Part II*, A. Leonardis, H. Bischof and A. Prinz (eds.), Lect. Notes in Computer Science 3952, pp. 283-294.

International Conference Proceedings

- [C.1]. A. Chiuso and G. Picci (1998) “A wide-sense estimation theory on the unit sphere”. In *Proc. of IEEE 37th Conference on Decision and Control*, Tampa, Florida, December 1998, pp. 3743-9754.
- [C.2]. A. Chiuso, and G. Picci, (1999), “Subspace Identification by orthogonal decomposition”, *Proc. 14th IFAC World Congress*, Pechino, Cina, July, 1999, Volume H, pp. 241-246.
- [C.3]. H. Kawauchi, A. Chiuso, T. Katayama, G. Picci. (1999), “Comparison of Two Subspace Identification Methods for Combined Deterministic -Stochastic Systems”. In *Proc. of The 31st ISCIE International Symposium on Stochastic Systems Theory and its Applications*, Yokohama, Japan, 1999, pp. 7-12.

- [C.4]. A. Chiuso and S. Soatto (2000), “3-D Motion and Structure Causally Integrated Over Time: Analysis”, Tutorial lecture presented at *IEEE Intl. Conf. on Robotics and Automation*, San Francisco, April 2000. Preliminary version registered as *ESSRL Technical Report 99-001*
- [C.5]. A. Chiuso and G. Picci (2000), “Error Analysis of Certain Subspace Methods”. In *Proc. of IFAC International Symposium on System Identification*, Santa Barbara, June 2000, pp. 85-90.
- [C.6]. A. Chiuso and G. Picci (2000), “Probing Inputs for Subspace Identification”. In *Proc. of IEEE International Conference on Decision and Control CDC 2000*, Sydney, Australia. (Invited paper number INV0201.)
- [C.7]. A. Chiuso and S. Soatto (2000), “Monte Carlo filtering on Lie Groups”, In *Proc. of IEEE International Conference on Decision and Control CDC 2000*, Sydney, Australia. (Regular paper number REG1407.)
- [C.8]. A. Chiuso and G. Picci (2001), “Asymptotic Variance of Subspace Estimates”. *Proc. of IEEE International Conference on Decision and Control*, Orlando, Florida, USA, December 2001.
- [C.9]. A. Bissacco, A. Chiuso, Y. Ma and S. Soatto (2001) “Recognition of human gaits.” In *Proc. of the IEEE Intl. Conf. on Comp. Vision and Patt. Recog.*, Hawaii, Dec. 2001.
- [C.10]. R. Vidal, A. Chiuso and S. Soatto (2002) “Observability and Identifiability of Jump Linear Systems” In *Proc. of the IEEE Conf. on Decision and Control*, Las Vegas, USA, 2002.
- [C.11]. G. Gennari, A. Chiuso, F. Cuzzolin, R. Frezza (2002) “Integrating dynamic and probabilistic shape information for data association and tracking” In *Proc. of the IEEE Conf. on Decision and Control*, Las Vegas, USA, 2002.
- [C.12]. A. Chiuso, G. Picci (2003) “Asymptotic Variance of Subspace Methods by data Orthogonalization and Model Decoupling”, in *Proc. of the IFAC Int. Symposium on System Identification (SYSID)*, Rotterdam, 2003.
- [C.13]. A. Chiuso, G. Picci (2003) “Subspace Identification of Random Processes with Feedback”, in *Proc. of the IFAC Int. Symposium on System Identification (SYSID)*, Rotterdam, 2003.
- [C.14]. S. Soatto, A. Chiuso (2003) “Snippets of System Identification in Computer Vision”, in *Proc. of the IFAC Int. Symposium on System Identification (SYSID)*, Semi-Plenary lecture given by S. Soatto, Rotterdam, 2003.
- [C.15]. A. Chiuso (2004), “Asymptotic Variance of a Certain Closed-Loop Subspace Identification Method” *Proc. of the 43rd IEEE Conf. on Decision and Control, 2004*.
- [C.16]. A. Chiuso, G. Picci (2004), “Consistency Analysis of Certain Closed-Loop Subspace Identification Methods” *Proc. of the 43rd IEEE Conf. on Decision and Control, 2004*.
- [C.17]. G. Gennari, A. Chiuso, F. Cuzzolin, R. Frezza (2004), “Integration of shape constraints in data association filters” *Proc. of the 43rd IEEE Conf. on Decision and Control, 2004*.
- [C.18]. A. Chiuso, G. Picci (2005), “Prediction Error vs. Subspace methods in open and closed loop identification”. To appear in the *Proc. of the 16th IFAC World Congress*.
- [C.19]. A. Chiuso (2005), “On the relation between CCA and predictor based subspace identification”. *IEEE Conf. on Dec. and Control 2005*
- [C.20]. A. Chiuso, A. Ferrante, G. Picci (2005) “Reciprocal realization and modeling of textured images” *IEEE Conf. on Dec. and Control 2005*
- [C.21]. R. Frezza, A. Chiuso (2005) “Learning and exploiting invariants for multi-target tracking and data association” *IEEE Conf. on Dec. and Control 2005*.

- [C.22]. A. Chiuso (2006) “Asymptotic Equivalence of Certain Closed-Loop Subspace Identification Methods” *IFAC SYSID 2006, Newcastle, Australia (March 2006)*.
- [C.23]. A. Chiuso, G. Picci (2006) “Estimating the Asymptotic Variance of Closed-Loop Subspace Estimators” *IFAC SYSID 2006, Newcastle, Australia (March 2006)*.
- [C.24]. A. Chiuso, A. Ferrante and G. Picci (2006) “Realization of Reciprocal processes and applications to computer vision” Presented at the *Int. Symp. Mathematical Theory of Network and Systems*, July 2006.
- [C.25]. A. Chiuso (2006) “The role of Vector Autoregressive Modeling in Subspace Identification”, Proc. of the *IEEE Conf. on Dec. and Control*, San Diego, Dec. 2006.
- [C.26]. A. Chiuso (2007), “Some insights on the choice of the future horizon in CCA-type subspace algorithm” Proc. of the *American Control Conference, ACC’07*
- [C.27]. A. Chiuso, R. Muradore and E. Fedrigo (2007), “Adaptive Optics Systems: a challenge for closed-loop subspace identification” Proc. of the *American Control Conference, ACC’07*
- [C.28]. R. Vidal, S. Soatto, A. Chiuso (2007) “Applications of Hybrid System Identification in Computer Vision” *ECC 2007* (Invited Minitutorial Paper), Kos, Greece.
- [C.29]. R. Carli, A. Chiuso, L. Schenato and S. Zampieri (2007) “Consensus algorithm design for distributed estimation” *3rd International Workshop on Networked Control Systems: Tolerant to Faults*, Nancy, France, Jun. 2007
- [C.30]. R. Carli, A. Chiuso, L. Schenato and S. Zampieri (2007), “Distributed Kalman filtering using consensus strategies” Proc. of *IEEE Conf. on Decision and Control*, New Orleans, USA, Dec. 2007 (Accepted)
- [C.31]. A. Chiuso (2008) “A note on estimation using quantized data” *17th IFAC World Congress*, Seoul (Korea), July 2008 (Accepted).
- [C.32]. R. Carli, A. Chiuso, L. Schenato and S. Zampieri (2008), “A PI Consensus Controller for Networked Clocks Synchronization” *17th IFAC World Congress*, Seoul (Korea), July 2008 (Accepted).
- [C.33]. E. Toffoli, G. Baldan, G. Albertin, L. Schenato, A. Chiuso, A. Beghi (2008), “Thermodynamic Identification of Buildings using Wireless Sensor Networks” *17th IFAC World Congress*, Seoul (Korea), July 2008 (Accepted).
- [C.34]. A. Agnoli, A. Chiuso, P. D’Errico, A. Pegoraro, L. Schenato (2008), “Sensor fusion and estimation strategies for data traffic reduction in rooted wireless sensor networks” *International Symp. on Communication, Control and Signal Processing (ISCCSP 2008)*, Malta, March 2008.
- [C.35]. A. Chiuso, R. Muradore, E. Marchetti (2008), “Dynamic Calibration of Adaptive Optics Systems: A System Identification Approach” *2008 IEEE Conf. on Dec. and Control*.
- [C.36]. A. Chiuso, L. Schenato (2008), “Information fusion strategies from distributed filters in packet-drop networks” *2008 IEEE Conf. on Dec. and Control*.
- [C.37]. G. Pillonetto, A. Chiuso, G. De Nicolao (2008), “Predictor Estimation via Gaussian regression” *2008 IEEE Conf. on Dec. and Control*.
- [C.38]. A. Chiuso, G. Pillonetto, G. De Nicolao (2008), “Subspace Identification using predictor estimation via Gaussian regression” *2008 IEEE Conf. on Dec. and Control*.
- [C.39]. A. Chiuso, G. Picci (2008), “Identification techniques in Computer Vision” *2008 IEEE Conf. on Dec. and Control* (Invited Tutorial Paper)

- [C.40]. G. Pillonetto, A. Chiuso (2009), “Gaussian Processes for Wiener-Hammerstein System Identification” *IFAC SYSID*
- [C.41]. M. H. Quang, G. Pillonetto, A. Chiuso (2009), “Nonlinear system identification via Gaussian regression and mixtures of kernels” *IFAC SYSID 2009*
- [C.42]. A. Chiuso, L. Schenato (2009), “Performance bounds for information fusion strategies in packet-drop networks” *ECC 2009*
- [C.43]. G. Pillonetto, A. Chiuso (2009), “A Bayesian learning approach to linear system identification with missing data” *CDC 2009*.
- [C.44]. G. Pillonetto, A. Chiuso, G. De Nicolao (2010), “Regularized estimation of sums of exponentials in spaces generated by stable spline kernels” *ACC 2010*.
- [C.45]. A. Chiuso, G. Pillonetto (2010), “Nonparametric sparse estimators for identification of large scale linear systems”, *IEEE CDC 2010*.
- [C.46]. A. Chiuso, R. Muradore, E. Aller-Carpentier (2010), “Sparse Calibration of an Extreme Adaptive Optics System”, *IEEE CDC 2010*.
- [C.47]. A. Chiuso, G. Pillonetto (2010), “Learning sparse dynamic linear systems using stable spline kernels and exponential hyperpriors”, *NIPS 2010*.
- [C.48]. A. Chiuso, F. Fagnani, L. Schenato, S. Zampieri (2010). “Simultaneous distributed estimation and classification in sensor networks”. *IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys'10)*.

Technical Reports

- [R.1]. A. Chiuso, H. Jin, P. Favaro and S. Soatto (1999), “Application of Extended Kalman Filtering to the Reconstruction of 3-D Shape from Visual Motion”. *ESSRL Technical Report 99-001*.
- [R.2]. A. Chiuso (2000) “A Matlab Toolbox for Subspace Identification”, Università di Padova.
- [R.3]. A. Chiuso, G. Picci (2003), “Canonical Correlation Analysis of Linear Stochastic Systems with Inputs”, *Mittag-Leffler Technical Report No. 45, 2002/2003, Spring ISSN 1103-467X, ISN IML-R- 45-02/03-SE+spring*.
- [R.4]. A. Chiuso (2005), “Asymptotic Variance of Closed-Loop Subspace Identification Methods”. Università di Padova - Complete version (contains all proofs which have been omitted due to space limitation of the paper appeared in the *IEEE Transactions on Automatic Control* (July 2006)).

Papers under review

- [S.1]. R. Carli, A. Chiuso, L. Schenato and S. Zampieri (2008), “Distributed synchronization of noisy non-identical double integrators” Revised version submitted to *IEEE Transactions on Automatic Control*.
- [S.2]. A. Chiuso, L. Schenato (2009), “Information fusion strategies and performance bounds in packet-drop networks” *Automatica*, provisionally accepted.
- [S.3]. G. Pillonetto, M. H. Quang, A. Chiuso (2010), “A new kernel-based approach for nonlinear system identification”, *IEEE Trans. on Aut. Control*, provisionally accepted.
- [S.4]. A. Chiuso, F. Fagnani, L. Schenato, S. Zampieri (2010), “Gossip algorithms for simultaneous distributed estimation and classification in sensor networks”, submitted to “*IEEE Journal of Selected Topics in Signal Processing*”.