

Curriculum Vitae of ALESSANDRO CHIUSO

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Links to [Scholar Profile](#), [Scopus Profile](#).

05/2018

PROFESSIONAL EXPERIENCE

- Full professor*, University of Padova 05/2017-
- Associate professor*, University of Padova 03/2006-04/2017
- Research Consultant* for the Dept. of Computer Science, UCLA 10/2011-09/2012
- Researcher (Assistant professor)*, University of Padova 03/2001-02/2006
- Research associate ("Assegnista di ricerca")*, University of Padova 08/2000-02/2001
- EU-TMR Post-Doctoral fellow* Royal Institute of Technology, Sweden 03/2000-07/2000
- Visiting Research Scholar*, Washington University, USA 09/1998-06/1999

SHORT TERM RESEARCH VISITS (from a few days to one month)

Technical University of Eindhoven (11/2017) (host Prof. P. van den Hof), University of Kyoto (11/2011) (host Prof. Y. Otha), Linköping University (5/2011 and 11/2011) (host Prof. L. Ljung), Royal Institute of Technology (05/2007) (host Dr. P. Enqvist) University of Melbourne (04/2006) (host Prof. G. Nair), University of Texas at Austin (05/2005) (host Prof. J. Qin), UCLA (08/2010, 05/2005 and 07/2001) (host Prof. S. Soatto)

HONORS AND AWARDS

- Invited Plenary Speaker* at the 15th IFAC Symposium on System Identification (SYSID), Beijing, China, October 2015 ([Link](#)).
- Best Oral Presentation*: SIDRA annual meeting, Benevento, September 2012.
- Outstanding Reviewer*: IEEE Transactions on Automatic Control (2009) and Automatica (2007) (awarded to a pool of about 30 referees out of about 1300).
- IEEE Senior Member*, 2006.
- Ing. Aldo Gini Foundation Fellowship*, Padova, Italy, 1999.

EDITORIAL BOARDS

Associate Editor: *Automatica* (2008-), *IEEE Trans. on Aut. Cont.* (2010-2012), *IEEE Trans. on Cont. Syst. Technology* (2013-), *European J. of Control* (2011-), *IET Cont. Theory and Applications* (2007-2013) and *IEEE CSS Conference Editorial Board* (2004-2009).

RESEARCH INTERESTS

System Identification and Machine Learning, Mathematical Modelling in Neuroscience, Computer Vision, Networked Control Systems.

INVITED TALKS/LECTURES

Alessandro Chiuso has been **Invited Plenary Speaker** at the 15th IFAC Symposium on System Identification (Beijing, 2015). He has also been invited speaker on the occasion of several international conferences/workshops/schools and given talks in international institutions.

RESEARCH FUNDING AS PRINCIPAL INVESTIGATOR (PI - Total funding \simeq 850Keuro)

- Coordinator (PI) "Progetto Ricerca SID 2016 (UniPD)": Statistical learning methods for brain networks modeling"*. Co-Investigators: Maurizio Corbetta, Marco Zorzi, Alessandra Bertoldo, Leonardo Badia, Total funding 51Keuro
- National Coordinator (PI): "Progetto FIRB 2012" (RBF12M3AC)*; total Funding 713Keuro.
- PI: "Progetto di Ateneo" (CPDA090135/09), University of Padova (2010-2012)*, Total Funding 38Keuro.
- Coordinator, Ex 60% Automation group @DTG 2007-2011*, Total funding \simeq 34.7Keuro.
- PI: "Assegno di ricerca" (funds for a Post-Doc position) (CPDR058728) University of Padova (2005)*.

ORGANIZATION OF SCIENTIFIC EVENTS (as main organizer/chair)

- Organizer (Chair, as **Team Leader** of the *UNIPD/Italy Team*) of the 25th Workshop of the European Research Network on System Identification ([link to web page](#)), September 2016, Italy.
- Invited organizer of the course on “*Stochastic Systems*” for the Italian summer school for Ph.D. Students in Automatic Control, 07/2012.
- Organizer (Chair) of the Annual SIDRA (Italian Association of Automatic Control) meeting, 2008.
- Organizer (with A. Ferrante and S. Pinzoni) of the workshop: *Modeling, Estimation and Control: A Symposium in honor of Giorgio Picci on the occasion of his 65-th birthday*, 2007.

RESEARCH GROUP/Ph.D STUDENTS and POST-DOCS SUPERVISED

- **Mattia Zorzi**: *Researcher (RTDa) (2014-2017) funded by the 2012 FIRB project. Giulia Prando*: *Assegnista di Ricerca (2017-)*. **Giulia Prando**: *PhD student (2014-2016)*, **Diego Romeres**: *Research collaborator (2013), PhD student (2014-2016)*. **Francesca Carli**: *Post Doctoral fellow (Assegnista di Ricerca) (2011-2012)*.

MEMBER OF COMMITTEES AND DUTIES WITHIN THE UNIVERSITY OF PADOVA

- “*Commissione Dipartimentale BIRD (Assegni e Progetti)*” - Area 11, DEI (2017)
- *Coordinator of the “Commissione Comunicazione”, DEI (2017-)*
- “*Machine Learning working group*” for setting up a new Machine Learning class (2015-).
- “*Commissione Risorse*”; invited as representative for Associate Professors (elected, 2015-2017).
- *Responsible for the Course Catalogue of the Ph.D. Program in Information Engineering, DEI (2015-2017)*
- *Responsible for the Erasmus program with the Royal Institute of Technology, Sweden (2013-)*.
- “*Collegio dei Docenti*” of the Ph.D. program in Information Engineering , DEI, 2007-2009, 2014-2017.
- “*Commissione Risorse*”, (Invited repr. for the ING-INF group @DTG) DEI/DTG, 2010-2011.
- “*Commissione Scientifica*”, DTG, (2010).
- “*Commissione Biblioteca*”, DEI (2004-2006).

BRIEF OVERVIEW OF OTHER ACTIVITIES

Alessandro Chiuso has been involved as IPC/TPC member, organiser and invited speaker in many workshops, tutorials, invited sessions on the occasion of major conferences and PhD schools; he has given invited talks in many international institutions. He is **Chair** of the IFAC Technical Committee TC 1.1 on Modeling, Identification and Signal Processing. He has been also involved as *investigator* in several *PRIN*, *European projects* as well as *industrial projects*. He has been an evaluator for several international research projects, including two ERC grants.

PUBLICATIONS (See Scholar and Scopus reports for full list, links below)

Citations (as of May 26th, 2018):

Scholar: h-index 29, tot. cit. 5154 ([LINK](#)), *Scopus*: h-index 23, tot. cit. 3054 ([LINK](#))

Author of 38 journal papers (31 *regular papers* (R), 5 of which single authored, and 7 *brief papers* (B) in main journals such as *Automatica* (13R+4B), *IEEE Trans. Aut. Cont.* (6R+2B), *IEEE Pat. An. Mach. Int* (2R), *J. Machine Learn. Res.* (1R), *Int. J. Comp. Vis.* (2R), *IEEE Trans. Cont. Syst. Tech.* (1B), *IEEE J. Sel. Area Com.* (1R), *IEEE J. Sel. Top. Sign. Proc.* (1R), *J. Econom.* (1R), *SIAM J. Sci. Comp.* (1R), *Ann. Rev. Cont.* (1R), *Int. J. Appl. Math.* (1R), *Com. Inf. Syst.* (1R)) and author of more than 90 conference papers and book chapters and of two edited books.

◇ Publications

Reported below the **38** Journal papers and **20 selected** “additional significant publications”.
(More than 90 Conference papers and Book Chapters, see Scholar and Scopus links below)

Citations (as of May 26th, 2018):

Scholar: h-index 29, tot. cit. 5154 ([LINK](#)), *Scopus*: h-index 23, tot. cit. 3054 ([LINK](#))

See also <http://automatica.dei.unipd.it/people/chiuso.html>

International Journals

- [J.1]. **A. Chiuso**, R. Brockett and S. Soatto (2000), “Optimal Structure From Motion: Local Ambiguities and Global Estimates”. *IJCV, International Journal of Computer Vision*, **39** (3), pp. 195-228.
- [J.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.
- [J.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. 523-535.
- [J.4]. G. Doretto, **A. Chiuso**, Y.N. Wu, S. Soatto (2003), “Dynamic Textures”. *Int. Journal of Computer Vision*, 51(2), 2003, pp. 91-109.
- [J.5]. **A. Chiuso** and G. Picci (2004), “Asymptotic Variance of Subspace Estimates”. *Journal of Econometrics*, 118(1-2), pp. 257–291.
- [J.6]. **A. Chiuso**, G. Picci (2004), “On the Ill-conditioning of subspace identification with inputs”. *Automatica*, 40(4), pp. 575–589, Regular paper.
- [J.7]. **A. Chiuso**, G. Picci (2004), “Numerical conditioning and asymptotic variance of subspace estimates”. *Automatica*, 40(4), pp. 677-683, Brief Paper.
- [J.8]. **A. Chiuso**, G. Picci (2004), “Subspace identification by data orthogonalization and model decoupling”. *Automatica*, 40(10), pp. 1689–1703, Regular paper.
- [J.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.
- [J.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.
- [J.11]. **A. Chiuso** (2006), “Asymptotic Variance of Closed-Loop Subspace Identification Methods”. *IEEE Trans. on Automatic Control*, 51(8), pp. 1299-1314 (regular paper).
- [J.12]. **A. Chiuso** (2007), “The role of Vector AutoRegressive modeling in Predictor Based Subspace Identification”. *Automatica* 43(6), pp. 1034-1048 (regular paper).
- [J.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).
- [J.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).

- [J.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).
- [J.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.
- [J.17]. G. Pillonetto, **A. Chiuso** (2009), “Fast computation of smoothing splines subject to equality constraints” *Automatica*, 45(12), pp. 2842-2849 (brief paper).
- [J.18]. **A. Chiuso**, R. Muradore, E. Marchetti (2010), “Dynamic Calibration of Adaptive Optics Systems: A System Identification Approach” *IEEE Transactions on Control Systems Technology*, 18(3), pp. 705–713, (brief paper).
- [J.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).
- [J.20]. G. Pillonetto, **A. Chiuso**, G. De Nicolao (2011), “Prediction error identification of linear systems: a Gaussian regression approach” *Automatica*, 47(2), pp. 291-305, (regular paper).
- [J.21]. **A. Chiuso**, L. Schenato (2011), “Information fusion strategies and performance bounds in packet-drop networks” *Automatica*, 47(7), pp. 1304-1316, (regular paper).
- [J.22]. R. Carli, **A. Chiuso**, L. Schenato and S. Zampieri (2011), “Distributed synchronization of noisy non-identical double integrators” *IEEE Transactions on Automatic Control*, 56(5), pp. 1146-1152, (technical note).
- [J.23]. **A. Chiuso**, F. Fagnani, L. Schenato, S. Zampieri (2011), “Gossip algorithms for simultaneous distributed estimation and classification in sensor networks”, *IEEE Journal of Selected Topics in Signal Processing*, 5(4), pp. 691–706, (regular paper).
- [J.24]. G. Pillonetto, M. H. Quang, **A. Chiuso** (2011), “A new kernel-based approach for nonlinear system identification”, *IEEE Trans. on Automatic Control*, 56(12) pp. 2825 – 2840 (regular paper).
- [J.25]. **A. Chiuso** and G. Pillonetto (2012), “A Bayesian approach to sparse dynamic network identification”, *Automatica* 48(2), pp. 1553-1565. (regular paper)
- [J.26]. A. Aravkin, J. Burke, **A. Chiuso** and G. Pillonetto (2014) , “Convex vs non-convex estimators for regression and sparse estimation: the mean squared error properties of ARD and GLasso”, *Journal of Machine Learning Research*, 15(Jan):217–252, 2014.
- [J.27]. T. Chen, M.S. Andersen, L. Ljung, **A. Chiuso** and G. Pillonetto (2014) “System identification via sparse multiple kernel-based regularization using sequential convex optimization techniques”, *IEEE Transactions on Automatic Control*, 59(11) pp. 2933 - 2945 (regular paper).
- [J.28]. S. Dey, **A. Chiuso**, L. Schenato (2014). Remote estimation with noisy measurements subject to packet loss and quantization noise. *IEEE Transactions on Control of Network Systems*, 1(3), pp. 204 – 217 (Regular paper).
- [J.29]. **A. Chiuso**, N. Laurenti, L. Schenato, A. Zanella (2014). LQG-like control over communication channels for scalar systems: the role of data losses, delays and SNR limitations. *Automatica*, 50(12), pp. 3155–3163 (Brief paper)
- [J.30]. S. Bonettini, **A. Chiuso**, M. Prato (2015). A scaled gradient projection methods for Bayesian Learning in Dynamical Systems. *SIAM J. Scientific Computing*, 37(3), A1297–A1318.

- [J.31]. G. Pillonetto, **A. Chiuso** (2015). Tuning complexity in regularized kernel-based regression and linear system identification: the robustness of the marginal likelihood estimator. *Automatica*, 58(8), pp. 106–117 (Regular paper)
- [J.32]. T. Chen, T. Ardeshiri, F.P. Carli, **A. Chiuso**, L. Ljung, G. Pillonetto (2016). Maximum entropy properties of discrete-time first-order stable spline kernel. *Automatica*, 66(4), pp. 34–38 (Technical Communique).
- [J.33]. G. Pillonetto, T. Chen, **A. Chiuso**, G. De Nicolao, L. Ljung (2016). Regularized linear system identification using atomic, nuclear and kernel-based norms: the role of the stability constraint. *Automatica* 69(7), pp. 137–149 (Regular paper)
- [J.34]. **A. Chiuso** (2016). Regularization and Bayesian Learning in Dynamical Systems: Past, Present and Future. *Annual Reviews in Control*, 41, pp. 24-38. Also **Plenary Lecture** at IFAC SYSID 2015.
- [J.35]. M. Zorzi, **A. Chiuso** (2017). “Sparse plus Low rank Network Identification: A Nonparametric Approach”. *Automatica*, 76(2), pp. 355–366 (regular paper).
- [J.36]. G. Prando, **A. Chiuso**, G. Pillonetto (2017). “Maximum Entropy Vector Kernels for MIMO system identification”. *Automatica*, 79, pp. 326-339 (regular paper).
- [J.37]. S. Dey, **A. Chiuso**, L. Schenato (2017). “Feedback Control over lossy SNR-limited channels: linear encoder-decoder-controller design”. *Accepted as Technical Note on February 11th, 2017, IEEE Transactions on Automatic Control*.
- [J.38]. M. Zorzi, **A. Chiuso** (2018). “The harmonic analysis of kernel functions”. *Automatica*, 94, pp. 125-137 (regular paper).

List of 20 additional most significant publications (Selected Book Chapters and/or Conference Proceedings)

- [P.1]. **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.
- [P.2]. **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.)
- [P.3]. 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.
- [P.4]. 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.
- [P.5]. **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).
- [P.6]. **A. Chiuso**, G. Picci (2003) “Constructing the State of Random Process with Feedback”, in *Proc. of the IFAC Int. Symposium on System Identification (SYSID)*, Rotterdam, 2003.
- [P.7]. 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,

- [P.8]. 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.
- [P.9]. A. Masiero, **A. Chiuso** (2006) “Non linear temporal textures synthesis: a Monte Carlo approach” in Proc. of ECCV 2006: *Computer Vision -ECCV 2006, Part II*, A. Leonardis, H. Bischof and A. Prinz (eds.), Lect. Notes in Computer Science 3952, pp. 283-294.
- [P.10]. R. Vidal, S. Soatto, **A. Chiuso** (2007) “Applications of Hybrid System Identification in Computer Vision” *ECC 2007* (Invited Minitutorial Paper), Kos, Greece.
- [P.11]. 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.
- [P.12]. G. Pillonetto, **A. Chiuso**, G. De Nicolao (2010), “Regularized estimation of sums of exponentials in spaces generated by stable spline kernels” *Proc of ACC 2010*.
- [P.13]. **A. Chiuso**, G. Pillonetto (2010), “Learning sparse dynamic linear systems using stable spline kernels and exponential hyperpriors”, *NIPS 2010*.
- [P.14]. V. Karasev, **A. Chiuso** and S. Soatto. “Controlled Recognition Bounds for Visual Learning and Exploration”, *NIPS 2012*
- [P.15]. **A. Chiuso** (2014), “System Identification Techniques: Convexification, Regularization, Relaxation”, *Springer Encyclopedia of Systems and Control*. Editors J. Baillieul and T. Samad.
- [P.16]. G. Prando, **A. Chiuso**, G. Pillonetto. “Bayesian and regularization approaches to multivariable linear system identification: the role of rank penalties ” *IEEE CDC 2014, Invited Tutorial Paper*
- [P.17]. K. Tsotsos, **A. Chiuso**, S. Soatto. “Robust Inference for Visual-Inertial Sensor Fusion” . Proc. of ICRA 2015 (see also [video here](#))
- [P.18]. D. Romeres, M. Zorzi, R. Camoriano, **A. Chiuso**. Online semi-parametric learning for inverse dynamics modeling. *IEEE CDC 2016*.
- [P.19]. G. Prando, D. Romeres, **A. Chiuso**. On-line Identification of Time-Varying Systems: a Bayesian approach. *IEEE CDC 2016*.
- [P.20]. S. Soatto, **A. Chiuso**. “Modeling Visual Representations: Defining Properties and Deep Approximations”. International Conference on Learning Representation (ICLR), 2016