CURRICULUM VITAE: Cristina PIGNOTTI

Coordinates:

• e-mail: pignotti@univaq.it

• address: Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica, Università di L'Aquila, Italy

• web: http://people.disim.univaq.it/∼pignotti/

Positions:

• Associate Professor, Università di L'Aquila, Italy, 2015–today;

• Research Associate, Università di L'Aquila, Italy, 2002–2015;

• INdAM Fellow, Università di Roma "Tor Vergata", Italy, 2002;

• Research Contract, Università di Roma "La Sapienza", Italy, 2001.

Education:

• PhD in Mathematics: 2001, Università di Roma "Tor Vergata", Italy;

• Laurea in Matematica: 1994, Università di Camerino, Italy.

Research Interests:

• Partial Differential Equations;

• Control theory;

• Models and applications.

Organisation of conferences and editorial activitiy:

• Scientific organizing commette: "Progetto Gnampa 2017 - Comportamento asintotico e controllo di equazioni di evoluzione non lineari", Università di Firenze, Italy, October 13, 2017;

• Scientific organizing commettee: "One Day on PDEs @GSSI", GSSI, L'Aquila, Italy, May 20, 2015;

• Organizing committee: "Viscosity, metric and control theoretic methods in nonlinear PDEs", Gaeta, Italy, September 27- October 1, 2004;

• Editorial board: Evolution Equations and Control Theory (since April 2018), Abstract and Applied Analysis (2012-today);

• Reviewer for Mathematical Reviews, since 2006;

• Referee for the journals em Acta Applicandae Mathematicae, *Applicable Analysis*, *Applied*

Mathematics and Computation, *Applied Mathematics Letters*, *Applied Mathematics and Optimization*, *Asymptotic Analysis*, *Automatica*, *Communication on Pure and Applied Analysis*, *Discrete and Continuous Dynamical Systems*, *Electronic Journal of Differential Equations*, *ESAIM: Control, Optimisation and Calculus of Variations*, *IMA Journal of Mathematical Control and Information*, *Journal of Differential Equations*, *Journal of Dynamical and Control Systems*, *Journal of Mathematical Analysis and Applications*, *Journal of Mathematical Physics*, *Mathematical Control and Related Fields*, *Mathematical Methods in the Applied Sciences*, *Networks and Heterogeneous Media*, *Nonlinear Analysis TMA*, *Nonlinear Differential Equations and Applications*, *Rendiconti del Circolo Matematico di Palermo*, *Rendiconti dell'Istituto di Matematica dell'Università di Trieste*,*Revista Matematica Complutense*, *Systems and Control Letters*, *SIAM Journal on Control and Optimization*, *Siam Journal on Mathematical Analysis*, *Zeitschrift fur Mathematik und Physik*.

Research Visits:

• June 2017: Institut de Mathématiques de Jussieu, Université Pierre et Marie Curie (Paris 6), Prof. H. Frankowska (1 week).

• May 2012: Mathematics Department, Université de Monastir, Prof. K. Ammari (1 week).

• March 2011: Academy of Mathematics and System Sciences, Chinese Academy of Sciences, Beijing, Prof. X. Zhang (1 week).

• May 2009: Mathematics Department, Université de Monastir, Prof. K. Ammari (1 week).

• June 2008: Université de Valenciennes, France, Prof. S. Nicaise (1 week).

• 2005 : "Professeur invité", Université de Valenciennes, Prof. S. Nicaise (1 month May 2005 and 1 week December 2005).

• December 2004: Université de Valenciennes, Prof. S. Nicaise (1 week).

• October 1997: Institut de Recherche Mathèmatique Avancée, Université "Louis Pasteur" de Strasbourg, Prof. V. Komornik (1 week).

Invited talks (since 2009):

• "*Stability results for time delayed evolution equations*", **Workshop "New trends in control of evolution systems", GSSI, L'Aquila**, April 20-21, 2018;

• "*Flocking estimates for Cucker-Smale models with time delay*", **Workshop "Paths in Mathematical Control Theory", Politecnico di Torino**, February 26-27, 2018;

• "*Flocking results for the Cucker-Smale model with time delay and hierarchical leadership*", **"1st DECOD -Delays and Constraints in Distributed Parameters Systems", Gif-sur-Yvette, France**, November 22-24, 2017;

• "*Asymptotic stability of evolution equations with time delay*", **Workshop "Recent advances in PDEs", Università Federico II, Napoli**, July 12-14, 2017;

• "*Energy decay estimates for abstract evolution equations with time delay*", **Workshop "New Trends in Control Theory and PDEs", INdAM, Roma**, July 3-7, 2017;

• "*Flocking results for the Cucker-Smale model with time delay*", **Workshop "Differential Equations and Applications", Bologna, Italy**, May 22-26, 2017;

• "*A stability result for the wave equation with Kelvin-Voigt damping and delay feedback*", **SIMAI 2016, Invited Session "Analysis and control of degenerate evolution equations", Milano**, September 13-16, 2016;

• "*On the Cucker-Smale model with time delay*", **First Joint Meeting Brazil-Italy in Mathematics, Invited Session "Control and asymptotic of Nonlinear PDE Dynamics", Rio De Janeiro**, August 29-September 2, 2016;

• "*Exponential stability of abstract evolution equations with time delay feedback*", **Workshop "Optimal Control for Evolutionary PDEs and Related Topics", Cortona, Italy**, June 20-24, 2016;

• "*Stabilization of viscoelastic wave equations with time delay*", **Workshop "Contrôle de EDP et Applications", CIRM, Luminy, Marseille**, November 9-13, 2015;

• "*Stability of wave equation with Kelvin-Voigt damping and dynamic boundary delay feedback*", **"27th IFIP Conference on System Modelling and Optimization", Invited Session "Well-posedness, control, and observability theories for partial differential equations", Sophia Antipolis, France**, June 29-July 3, 2015;

• "*Stability results for the wave equation with intermittent damping*", **"27th IFIP Conference on System Modelling and Optimization", Invited Session "Oscillation, Degeneracy and Controllability", Sophia Antipolis, France**, June 29-July 3, 2015;

• "*Stability results for a class of second-order evolution equations with intermittent delay*", **Workshop "Evolution Equations: long time behavior and control", Chambery, France**, June 15-18, 2015;

• "*Exponential stability of damped evolution equations against small delay feedback*", **Workshop "Control of Partial Differential Equations @GSSI", GSSI, L'Aquila**, April 22-24, 2015;

• "*Exponential stability for abstract evolution equations with delay*", **Workshop "PDE's, Inverse Problems and Control Theory 2014", Bologna**, September 15-19, 2014;

• "*Asymptotic stability for a class of semilinear evolution equations with time delay*", **"The 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications", Invited Session "Analysis and control of nonlinear partial differential equation evolution systems", Madrid**, July 7-11, 2014;

• "*Exponential stability for a viscoelastic wave equation with anti–damping/time delay*", **"First Joint International Meeting RSME–SCM–SEMA–SIMAI–UMII", Invited Session "Control of PDE: Theory, Numerics, and Applications", Bilbao, Spain**, June 30-July 4, 2014;

• "*Stabilization of second–order evolution equations with intermittent time–delay*", **Workshop "Controllability and networks", Roma**, May 26-28, 2014;

• "*Stability results for Second–Order Evolution Equations with Switching Time–Delay*", **"IFIP**

TC 7 Conference on System Modelling and Optimization", Invited Session "Novel Directions in Control of Evolutionary PDE problems", Klagenfurt, Austria, September 8-13, 2013;

• "*Stabilization of second–order evolution equations with time delay*", **Workshop "Differential Equations, Inverse Problems and Control Theory", Cortona, Italy**, June 17-21, 2013;

• "*Asymptotic stability of second–order evolution equations with intermittent delay*", **Workshop "PDEs, inverse problems and control theory", Bologna**, July 16-20, 2012;

• "*Exponential stability of the wave equation with interior time delay*", **Mathematics Department, Université de Monastir, Tunisia**, May 30, 2012;

• "*Stability results for wave equations with interior time delay*", **"Conference of the European GDR Control of PDEs", Marseille**, November 21-23, 2011;

• "*Feedback stabilization of wave equations with time delay*", **Academy of Mathematics and System Sciences, Beijing**, April 1, 2011;

• "*Exponential stability of the strongly damped wave equation with boundary feedback laws with delay*", **"PDE's, semigroup theory and inverse problems", Bologna**, September 1-4, 2010;

• "*Stabilità/instabilità dell'equazione delle onde con un termine di ritardo*", **Politecnico di Torino**, February 23, 2010;

• "*Feedback boundary stabilization of wave equations with interior delay*", **"First workshop of the European Research Group project - Control of Partial Differential Equations", Institut Henri Poincaré, Paris**, October 14-16, 2009;

• "*Existence and exponential estimate for positive solutions of a class of semilinear elliptic equations*", **" Septièmes journées des equations aux derivées partielles Lille - Littoral - Valenciennes", Valenciennes, France**, October 12-13, 2009;

• "*A uniform estimate for positive solutions of semilinear elliptic equations*", **Workshop "Mathematical Challenges Motivated by Multi-Phase materials: Analytical, Stochastic and Discrete Aspects", Anogia, Creta**, June 21-26, 2009.

Publications:

[**1**] C. Pignotti and I. Reche Vallejo,
"Flocking estimates for the Cucker-Smale model with time lag and ierarchical leadership",
Journal of Mathematical Analysis and Applications, Vol. 464 (2018), pp. 1313–1332.

[**2**] S. Nicaise and C. Pignotti,
"Well-posedness and stability results for nonlinear abstract evolution equations with time delays",
Journal of Evolution Equations (2018), DOI 10.1007/s00028-018-0427-5, published online.

[**3**] C. Pignotti,
"Stability results for second-order evolution equations with memory and switching time-delay",
Journal of Dynamics and Differential Equations, Vol. 29 (2017), pp. 1309–1324.

[**4**] G. Fusco, F. Leonetti, C. Pignotti,
"On the asymptotic behavior of symmetric solutions of the Allen-Cahn equation in unbounded domains in $\mathbb{R}^2$*"*,
Discrete and Continuous Dynamical Systems, Vol 37 (2017), pp. 725-742.

[**5**] G. Fragnelli, C. Pignotti,
"Stability of solutions to nonlinear wave equations with switching time-delay",
Dynamics of Partial Differential Equations , Vol. 13 (2016), pp. 31-51.

[**6**] S. Nicaise, C. Pignotti,
"Stability of the wave equation with localized Kelvin-Voigt damping and boundary delay feedback",
Discrete and Continuous Dynamical Systems-S , Vol. 13 (2016), pp. 31-51.

[**7**] K. Ammari, S. Nicaise, C. Pignotti,
"Stability of abstract wave equation with delay and a Kelvin-Voigt damping",
Asymptotic Analysis, Vol. 95 (2015), pp. 21–38.

[**8**] S. Nicaise, C. Pignotti,
"Exponential stability of abstract evolution equations with time delay",
Journal of Evolution Equations, Vol. 15 (2015), pp. 107–129.

[**9**] S. Nicaise, C. Pignotti,
"Stability results for second-order evolution equations with switching time-delay",
Journal of Dynamics and Differential Equations, Vol. 26 (2014), pp. 781–803.

[**10**] S. Nicaise, C. Pignotti,
"Stabilization of second-order evolution equations with time delay",
Mathematics of Control, Signals and Systems, Vol. 26 (2014), pp. 563–58.

[**11**] K. Ammari, S. Nicaise, C. Pignotti,
"Stabilization by switching time-delay",
Asymptotic Analysis, Vol. 83 (2013), pp. 263–283.

[**12**] S. Nicaise, C. Pignotti,
"Asymptotic stability of second- order evolution equations with intermittent delay",
Advances in Differential Equations, Vol. 17 (2012), pp. 879–902.

[**13**] C. Pignotti,
"A note on stabilization of locally damped wave equations with time delay",
Systems & Control Letters, Vol. 61 (2012), pp. 92–97.

[**14**] S. Nicaise, C. Pignotti,
"Exponential stability of second order evolution equations with structural damping and dynamic boundary delay feedback",
IMA Journal of Mathematical Control and Information, Vol. 28 (2011), pp. 417–446.

[**15**] S. Nicaise, C. Pignotti,
"Interior feedback stabilization of wave equations with time dependent delay" ,
Electronic Journal of Differential Equations, Vol. 2011 (2011), n. 41, pp. 1–20.

[**16**] G. Fusco, F. Leonetti, C. Pignotti,
"A uniform estimate for positive solutions of semilinear elliptic equations",

Transactions of American Mathematical Society, Vol. 363 (2011), pp. 4285–4307.

[**17**] S. Nicaise, C. Pignotti, J. Valein,
"Exponential stability of the wave equation with boundary time-varying delay" ,
Discrete and Continuous Dynamical Systems-S, Vol. 4 (2011), n. 3, pp. 693–722.

[**18**] K. Ammari, S. Nicaise, C. Pignotti,
"Feedback boundary stabilization of wave equation with interior delay",
Systems and Control Letters, Vol. 59 (2010), pp. 623–628.

[**19**] S. Nicaise, C. Pignotti,
"Asymptotic analysis of a simple model of fluide-structure interaction",
Networks and Heterogeneous Media, Vol. 3 (2008), n. 4, pp. 787–813.

[**20**] S. Nicaise, C. Pignotti,
"Stabilization of the wave equation with boundary or internal distributed delay",
Differential and Integral Equations, Vol. 21 (2008), n. 9-10, pp. 935–958.

[**21**] G. Fusco, C. Pignotti,
"Estimates for fundamental solutions and spectral bounds for a class of Schrödinger operators",
Journal of Differential Equations, Vol. 244 (2008), n. 3, pp. 514–554.

[**22**] G. Freni, F. Gozzi, C. Pignotti,
"Optimal strategies in linear multisector models: Value function and optimality conditions",
Journal of Mathematical Economics, Vol. 44 (2008), n. 1, pp. 55–86.

[**23**] S. Nicaise, C. Pignotti,
"Energy decay rates for solutions of Maxwell's system with a memory boundary condition",
Collectanea Mathematica, Vol. 58 (2007), n. 3, pp. 327–342.

[**24**] S. Nicaise, C. Pignotti,
"Partially delayed stabilizing feedbacks for Maxwell's system",
Advances in Differential Equations, Vol. 12 (2007), n. 1, pp. 27–54.

[**25**] S. Nicaise, C. Pignotti,
"Stabilization of the wave equation with variable coefficients and boundary condition of memory type",
Asymptotic Analysis, Vol. 50 (2006), n. 1-2, pp. 31–67.

[**26**] S. Nicaise, C. Pignotti,
"Stability and instability results of the wave equation with a delay term in the boundary or internal feedbacks",
SIAM Journal on Control and Optimization, Vol. 45 (2006), n. 5, pp. 1561–1585.

[**27**] S. Nicaise, C. Pignotti,
"Internal and boundary observability estimates for heterogeneous Maxwell's system",
Applied Mathematics and Optimization, Vol. 54 (2006), n. 1, pp. 47–70.

[**28**] S. Nicaise, C. Pignotti,
"Internal stabilization of Maxwell's equations in heterogeneous media",
Abstract and Applied Analysis 2005, n. 7, pp. 791–811.

[**29**] C. Pignotti,
"Semiconcavity results for constrained optimal control problems in a half-space",
Journal of Mathematical Analysis and Applications, Vol. 305 (2005), pp. 197–218.

[**30**] F. Camilli, C. Pignotti,
"A relaxation result for a class of degenerate Hamilton-Jacobi equations",
Differential and Integral Equations, Vol. 18 (2005), pp. 419–430.

[**31**] S. Nicaise, C. Pignotti,
"Boundary stabilization of Maxwell's equations with space-time variable coefficients",
ESAIM Control Optimisation and Calculus of Variations, Vol. 9 (2003), pp. 563–578.

[**32**] C. Pignotti
"Rectifiability results for singular and conjugate points of optimal exit time problems",
Journal of Mathematical Analysis and Applications, Vol. 270 (2002), pp. 681–708.

[**33**] P. Cannarsa, C. Pignotti,
"Semiconcavity of the value function for an exit time problem with degenerate cost",
Le Matematiche, Vol. 55 - Suppl. 2 (2000), pp. 71–10.

[**34**] P. Cannarsa, C. Pignotti, C. Sinestrari,
"Semiconcavity for optimal control problems with exit time",
Discrete and Continuous Dynamical Systems, Vol. 6 (2000), pp. 975–997.

[**35**] C. Pignotti,
"Observability and controllability of Maxwell's equations",
Rendiconti di Matematica e Applicazioni, Serie VII, Vol. 19 (2000), pp. 523–546.

[**36**] L. Fatone, C. Pignotti, M. C. Recchioni, F. Zirilli,
"Time harmonic electromagnetic scattering from a bounded obstacle: an existence theorem and a computational method",
Journal of Mathematical Physics, Vol. 40 (1999), n. 10, pp. 4859–4887.

Proceedings and Volumes

[**37**] C. Pignotti,
"Stability results for abstract evolution equations with intermittent time-delay feedback",
In Solvability, Regularity, and Optimal Control of Boundary Value Problems for PDEs, Springer Indam Series, Vol. 22 (2017), pp. 469–487.

[**38**] S. Nicaise and C. Pignotti,
" A note on the asymptotic stability of wave-type equations with switching time-delay", In Evolution Equations:Long Time behavior and Control, London Mathematical Society Lecture Note Series, Cambridge University Press, Vol. 439 (2017), pp. 137-150.

[**39**] F. Alabau-Boussouira, S. Nicaise, C. Pignotti,
"Exponential stability of the wave equation with memory and time delay"

New Prospects in Direct, Inverse and Control Problems for Evolution Equations, Springer Indam Series, Vol. 10 (2014), pp. 1–22.

[**40**] S. Nicaise, C. Pignotti,
"Exponential and polynomial stability estimates for the wave equation and Maxwell's system with memory boundary conditions",
Functional Analysis and Evolution Equations. The Gunter Lumer Volume (2008),
pp. 515–530, Birkhauser Verlag.

[**41**] P. Cannarsa, C. Pignotti,
"Optimal control with state constraints: a semiconcavity result",
in "Proceedings of the 38^{th} Conference on Decision and Control",
IEEE, New York (1999), pp. 436–441.

Preprints

[**42**] C. Pignotti and E. Trélat,
"Convergence to consensus of the general finite-dimensional Cucker-Smale model with time-varying delays",
preprint 2017, ArXiv:1707.05020.

[**43**] C. Pignotti and I. Reche Vallejo,
"Asymptotic analysis of a Cucker-Smale system with leadership and distributed delay",
preprint 2018.

Other Publications

[**44**] C. Pignotti,
" Problemi di controllo ottimo con tempi di uscita: semiconcavità e applicazioni",
Bollettino UMI, Serie VIII, Vol. IV-A (2001), pp. 531–534 (Abstract Phd Thesis).

Funded projects (as PI)

• Coordinator of the national GNAMPA 2018 research project "Analisi e controllo di modelli differenziali non lineari", partecipants: V. Basco, F. Bucci, P. Cannarsa, G. Floridia, R. Guglielmi, T. Scarinci, C. Urbani.

• Coordinator of the national GNAMPA 2017 research project "Comportamento asintotico e controllo di equazioni di evoluzione non lineari", partecipants: V. Basco, F. Bucci, P. Cannarsa, G. Floridia, G. Fragnelli, R. Guglielmi, T. Scarinci.

Other scientific activities

• Member of the *Collegio dei Docenti* of the Ph.D program Matematica e Modelli (previously Matematica), Università di L'Aquila (since 2009).

• Member of the Center of Excellence 'Design methodologies of Embedded controllers, Wireless interconnect and Systems-on-chip" (DEWS), Università di L'Aquila (since 2013).