



Jean-Pierre RICHARD

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Biography

Jean-Pierre Richard was born in Montpellier (France) in 1956. He is successively Dipl. Eng. (IDN, French "Grande Ecole") and M.Sc. (DEA) in Electronics in 1979, Ph.D. in Automatic Control in 1981, D.Sc. in Physical Sciences in 1984 (University of Lille). After starting his research and teaching activities in 1979, he joins in 1981 the Ecole Centrale de Lille as an Assistant Professor and moves up to Professor in 1989. He is presently a Professor "Classe Exceptionnelle 2" (which is the highest degree in the French University) at the Ecole Centrale de Lille (French "Grande Ecole"). Since 1993 he is awarded the French "prime d'excellence scientifique" (national competition every 4 year).

Elected as a Member of the Russian Academy of Nonlinear Sciences (1996), Senior Member IEEE (1998) and Senior Member of the SEE (2003), member of the IFAC Technical Committees *Linear Systems* (1998-present) and *Networked Systems* (2005-present), he was awarded the "Automatica best survey paper prize" for the period 2002-2005 (due to a survey paper on time delay systems). He was awarded 4 "Highly cited article" for papers from 1999 to 2004. In 2005, he was awarded the French "Palme Académiques" (national decoration for academic excellence).
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He served as a chairman of 4 international IEEE or IFAC conferences, participated in more than 50 IEEE/IFAC IPCs (including 18 as associate editor) and was awarded an IEEE SMC Outstanding Award 2005 for the organisation of the international conference CIFA2004, Tunisia (IEEE-CNRS). From 2000 to 2012 he belongs to the editorial board of the *Int. J. of Systems Science* (Taylor & Francis) and belongs to the *EUCA Conference Editorial Board* since 2015. He is a referee for control journals and conferences. He was invited as a plenary speaker in 3 international conferences (IEEE in 1998 and 2015, and IFAC in 2000) and as a lecturer in various International Schools and Institutes. He serves as an expert for the various French agencies (Ministry of Higher Education and Research, CNRS, National Agency for Research, evaluation agency AERES...) as well as international institutions (Belgium, Israel, Mexico, Sweden, Tunisia, USA).

Research

Since 2015, Jean-Pierre Richard is managing the research group (about 60 people) "Control and scientific Computing" of the CRIStAl (CNRS UMR 9189, research Center in Informatics, Signal and Automatic control in Lille). He also serves as the permanent head of the INRIA team *VALSE*, led by Denis Efimov since 2018 (INRIA is the French Institute for Research in Computers Appl. Math. and Control Sciences).

In the past, he has headed the team SyNeR (French acronym for "Systems with Nonlinear and Retarded effects") of the CNRS Lab UMR 8219 (until 2010), permanent head (vice-head) of the INRIA project-team *ALIEN* led by Michel Fliess (2006-2010), then the leader of the project-team *NON-A* "Non-Asymptotic estimation for on-line systems" at the INRIA Research Center in Lille (2011-2017).

His personal research concerns the analysis and control of complex, linear or nonlinear systems, and in particular to the linked convergence issues. Since 1991, he is invested in the study of time delay systems (stability, control, observation, identification) and their applications (networked control systems, remote and collaborative control, robotics for transportation, aeronautics, flow control, biology). He is involved in various research programs (see below) and has advised 34 PhD (including 5 under preparation) and 7 HDR (French D.Sc.). He has published over 380 works, including 120 papers in journals or collective volumes, 1 patent, 5 editions of special issues devoted to Time Delay Systems, 1 monograph on stability domains for nonlinear systems (CRC press) and 9 other monographs in French aimed at mathematics and control students. For a list of his personal publications, see [here](#).

Collective Responsibilities

J.P. Richard is the French PI for the European H2020 program UCoCoS (involving KULeuven and TU/Eindhoven), and the Director of the Professional Training « Research » of Ecole Centrale de Lille since 2003 (training for last-year students of EC Lille who are aiming at a research career). He is an elected member of the Scientific Council of Ecole Centrale de Lille since 1994.

In the past, headed the Doctoral Researches Training in Automatic Control, University of Lille and Ecole Centrale de Lille (2000-2003). Concerning the research side, he was the General Chairman of the GRAISyHM (1996-2012), French acronym for Research Federation in Integrated Automation and Man-Machine Systems, grouping about 260 researchers from 11 Institutes of North France. This research federation is sponsored by the Region Council "Nord-Pas de Calais" since November 1996, by the French Ministry of Research on 2006-2010 and by the Ministry of Foreign Affairs for 2007-2010. He also was in charge of a network devoted to Time-delay systems supported by the French CNRS (1999-2001), headed a national program entitled "Automatic Control and Communication Networks" co-sponsored by the French Ministry of Research and the CNRS (2001-2003), took part to a NSF-CNRS program "Delay Systems" (2002-2004), co-chaired a Multidisciplinary CNRS Thematic Network devoted to "Control Systems and Communication Networks" (2003-2005) and was the general manager of a research grant on Automation, Optimization and Man-Machine Systems for Transport sponsored by the European Community, the French Government and the Region Nord - Pas de Calais (2000-2008). He served as a coordinator for the evaluation seminar of the INRIA theme "Optimization and control of dynamic systems" at the national level (2017).

Prof. Richard participated to various committees: the Expert Committee "Control systems" of the CNRS (2005-2009), the Scientific Council of ENSEA Cergy (2009-2016, Governing Board of the national research network "MACS" (CNRS, Modelling, Analysis and Control of dynamical Systems)(2001-2005, 2009-2013) and the Scientific Committee of its research group ARC on control and communication networks (2009-2017), the Projects Bureau of the INRIA Research Center in Lille (2007-2016), as well as various Recruiting Committees (EC Lille, Univ.Valenciennes, Univ.Nantes-EC Nantes, Grenoble-INP).

He has participated to 100 PhD and DSc. committees (France, Morocco, Mexico, Sweden, Tunisia) and has been an invited Professor at the Hassan II University of Casablanca (Morocco), the Tulane University in New Orleans (USA), the Ecole Nationale d'Ingénieurs de Tunis (Tunisia) as well as in CICESE Ensenada (Mexico) and KTH Stockholm (Sweden).

A selection of journal papers

A note on distributed finite-time observers

H. SILM, R. USHIROBIRA, D. EFIMOV, J.P. RICHARD, W. MICHIELS
IEEE TAC 2019 <https://hal.archives-ouvertes.fr/hal-01827041>

Design of interval observers and controls for PDEs using finite-element approximation

T. KHARKOVSKAIA, D. EFIMOV, A. POLYAKOV, J.P. RICHARD
Automatica 2018 <https://hal.archives-ouvertes.fr/hal-01759948>

SISO model-based control of separated flows: Sliding mode and optimal control approaches

M. FEINGESICHT, A. POLYAKOV, F. KERHERVE, J.P. RICHARD
IJRNC 2017 <https://hal.inria.fr/hal-01587824/>

Recent developments on the stability of systems with aperiodic sampling: An overview

L. HETEL, C. FITER, H. OMRAN, A. SEURET, E. FRIDMAN, J.P. RICHARD, S.I. NICULESCU
Automatica 2017 (survey paper) <https://hal.archives-ouvertes.fr/hal-01363448v1>

Linear interval observers under delayed measurements and delay-dependent positivity

D. EFIMOV, E. FRIDMAN, A. POLYAKOV, W. PERRUQUETTI, J.P. RICHARD
Automatica 2016 <https://hal.archives-ouvertes.fr/hal-01312981v1>

Stability analysis of some classes of input-affine nonlinear systems with aperiodic sampled-data control

H. OMRAN, L. HETEL, M. PETRECZKY, J.P. RICHARD, F. LAMNABHI-LAGARRIGUE
Automatica 2016 <https://hal.archives-ouvertes.fr/hal-01343851v1>

Delayed sliding mode control

D. EFIMOV, A. POLYAKOV, L. FRIDMAN, W. PERRUQUETTI, J.P. RICHARD
Automatica 2016 <https://hal.inria.fr/hal-01213703>

Weighted homogeneity for time-delay systems: Finite-time and independent of delay stability

D. EFIMOV, A. POLYAKOV, W. PERRUQUETTI, J.P. RICHARD
IEEE TAC 2016 <https://hal.inria.fr/hal-01145321/>

Implicit Lyapunov-Krasovskii Functionals for stability analysis and control design of Time Delay Systems

A. POLYAKOV, D. EFIMOV, W. PERRUQUETTI, J.P. RICHARD
IEEE TAC 2015 <https://hal.inria.fr/hal-01160061>

Unknown input observer for linear time-delay systems

G. ZHENG, F.J. BEJARANO, W. PERRUQUETTI, J.P. RICHARD
Automatica 2015 <https://hal.inria.fr/hal-01252331>

A robust stability framework for time-varying sampling

C. FITER, L. HETEL, W. PERRUQUETTI, J.P. RICHARD
Automatica 2015 <https://hal.inria.fr/hal-01194561>

Comments on finite-time stability of time-delay systems.

D. EFIMOV, A. POLYAKOV, E. FRIDMAN, W. PERRUQUETTI, J.P. RICHARD,
Automatica 2014 <http://hal.archives-ouvertes.fr/hal-00986004>

Development of homogeneity concept for time-delay systems.

D. EFIMOV, W. PERRUQUETTI, J.P. RICHARD.
SIAM J. Ctrl & Opt. 2014 <http://hal.archives-ouvertes.fr/hal-00956878>

Output stabilization of time-varying input delay systems using interval observation technique.

A. POLYAKOV, D. EFIMOV, W. PERRUQUETTI, J.P. RICHARD.
Automatica 2013 <http://hal.inria.fr/hal-00847565>

A state dependent sampling for linear state feedback.

C. FITER, L. HETEL, W. PERRUQUETTI, J.P. RICHARD,
Automatica 2012 <http://hal.archives-ouvertes.fr/hal-00685345/fr/>

A switched system approach to exponential stabilization through communication network.

A. KRUSZEWSKI, W.J. JIANG, E. FRIDMAN, J.P. RICHARD, A. TOGUYENI.
IEEE TCST 2012 <http://hal.inria.fr/inria-00602327/fr/>

On observation of time-delay systems with unknown inputs.

G. ZHENG, J.P. BARBOT, D. BOUTAT, T. FLOQUET, J.P. RICHARD
IEEE TAC 2011 <http://hal.inria.fr/inria-00637164/fr/>

Discrete and intersample analysis of systems with aperiodic sampling.

L. HETEL, A. KRUSZEWSKI, W. PERRUQUETTI, J.P. RICHARD
IEEE TAC 2011 <http://hal.archives-ouvertes.fr/hal-00576366/fr/>

Multivariate numerical differentiation.

S. RIACHY, M. MBOUP, J.P. RICHARD
JCAM 2011 <http://hal.inria.fr/inria-00637164/fr/>

Delay-dependent sampled-data control based on delay estimates.

L. HETEL, J. DAAFOUZ, J.P. RICHARD, M. JUNGERS
Syst. & Ctrl. Letters 2011 <http://hal.archives-ouvertes.fr/hal-00556635/fr/>

Parameters estimation of systems with delayed and structured entries.

L. BELKOURA, J.P. RICHARD, M. FLIESS
Automatica 2009 <http://hal.inria.fr/inria-00343801/fr/>

Second order sliding mode control of underactuated mechanical systems - Parts I & II.

S. RIACHY, Y. ORLOV, T. FLOQUET, R. SANTIESTEBAN, J.P. RICHARD
IJRNLC 2008 <http://hal.inria.fr/inria-00179854/fr/>

Design of a pressure control system with dead band and time delay.

J. ANTHONIS, A. SEURET, J.P. RICHARD, H. RAMON
IEEE TCST 2007 <http://hal.inria.fr/inria-00131415/fr/>

Robust sampled-data stabilization of linear systems: An input delay approach.

E. FRIDMAN, A. SEURET, J.P. RICHARD
Automatica 2004 <http://hal.inria.fr/inria-00131031/fr/>

Time Delay Systems: An overview of some recent advances and open problems.

J.P. RICHARD
Automatica 2003 (survey paper)

Robust control of systems with variable delay: A sliding mode control design via LMI.
F. GOUAISBAUT, M. DAMBRINE, J.P. RICHARD
Syst. & Ctrl. Letters 2002 <http://hal.archives-ouvertes.fr/hal-00369230>

Stability of some linear systems with delay
V.B. KOLMANOVSKII, J.P. RICHARD,
IEEE TAC 1999

Stability of perturbed systems with time-varying delay
GOUBET-BARTHOLOMEUS A., DAMBRINE M., RICHARD J.P.
Syst. & Ctrl. Letters 1997 [pdf](#)

Citation metrics

H-index = 38, Total cites = 8821, Max cite = 2864 (source *Google Scholar* 12/09/2018). Erdős nb. = 4.