

# Curriculum Vitae

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# 1 Curriculum Vitae

**Last name :** LOZANO  
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**Place of birth :** Monterrey, Mexico  
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## 1.1 Degrees

- Electronic and Communication Engineer, 1975 ESIME, IPN, México D.F.
- Master in Automatic Control, 1977, Research and Advanced Studies Center (CINVESTAV), IPN, México D.F.
- DEA in Automatic Control, June 1978, Laboratoire d'Automatique de Grenoble, ENSIEG-INPG.
- PhD in Automatic Control on March 23th 1981 at INPG Grenoble France. Supervisor : I.D. Landau, Adaptive control of minimum and non-minimum phase systems. Jury: MM. Perret (President), P. Kokotovic, Ph. de Larminat, I.D. Landau, E. Irving.
- HDR (Diplôme d'Habilitation à diriger des Recherches) obtained on March 1990 at LAG-INPG. Jury: MM. Landau, L. Dugard, J.M. Dion, Ph. de Larminat

## 2 Academic positions hold

March 1981 - November 1983	Associate Professor CINVESTAV-IPN México.
November 1983 - November 1984	Visiting professor at University of Newcastle, N.S.W. Australia, funded by Aeronautical Research Laboratories.
November 1984 - August 1987	Professor CINVESTAV-IPN, México
August 1987 - August 1988	Senior Research Associate at NASA Langley Research Center, Hampton VA, U.S.A.
August 1988 - February 1989	Professor at CINVESTAV-IPN, México.
February 1989 - March 1990	Visiting professor, LAG-INPG
October 1990 -	CNRS Director of Research Heudiasyc UMR CNRS 6599, UTC UMI 3175 LAFMIA Mexico since April 2008

### 3 Scientific responsibilities

- Head of the CNRS Research Unit HEUDIASYC UMR 6599 of University of Technology of Compiègne from January 1995 through December 2007.
- Head of the Automatic Control Division at CINVESTAV, Mexico from June 1985 to August 1987.
- Researcher level 3 of SNI (National Researchers System) since 2009.
- Member of the evaluation committee Section 07 of CNRS from September 2000 to June 2006.
- Head of the Associated Virtual Laboratory LIA LAFMAA 2002-2006.
- Responsible for International collaborations at ST2I Department, CNRS from October 2006 to August 2009.
- Head of the International Research Unit UMI 3175 LAFMIA CNRS-CINVESTAV since April 2008.
- Member of the Control Theory Committee of IFAC 1981-1987.
- President of AMCA, Mexican National Member Organization of IFAC from September 1986 to September 1987.
- Member of the Direction Committee of the french CNRS GDR-Automatique 1996-2001.
- Member of the Administration Council of EUCA (European Association on Automatic Control) from May 1996 to September 2002.

#### 3.1 Participation in Workshops

- Organizer (with P. Kokotovic, I.D. Landau and R. Ortega) of the 1st AMCA Workshop on Robust and Adaptive Control, Oaxaca, México, December 1987.
- Member of the IPC of the 1988 IFAC Workshop on Robust Adaptive Control, Newcastle, Australia.
- Organizer of the II Workshop on Adaptive Control, Nonlinear Systems and Robotics. Cancun, Mexico, 9-11 December 1992.
- Organizer of the IV Workshop on Adaptive Control, Nonlinear Systems and Robotics. Cancun, Mexico, 7-9 December 1994.

- Organizer (with R. Ortega) of the workshop Passivity and its applications, Participants: D. Hill, K. Poola, A. van der Schaft et I.D. Landau, 25-26 November 1993, Compiègne, France.
- Member of the IPC of III European Control Conference, Rome, Italy, September 1995.
- Member of the IPC of the 3rd IEEE Mediterranean Symposium on New Directions in Control and Automation, Limassol, Cyprus, July 1995.
- Organizer (with S. Joshi) of the session "Advances in adaptive control methodology and applications". 1989 American Control Conference.
- Organizer (with G. Tao) of the session "Control of systems with nonsmooth nonlinearities". 35th IEEE-CDC, Kobe Japan, December 1996.
- Organizer (with C. Canudas and B. Brogliato) of the Workshop on Nonlinear and Adaptive Control. Participants: P. Kokotovic, R. Marino, L. Praly, K.J. Astrom, H. Nijmeijer, A. van der Schaft and S. Bittanti, 16 - 17 September, 1996 at LAG, Grenoble France.
- Member of the IPC of the 1998 Conference on Decision and Control, Tampa, Florida, December 1998.
- Organizer of a Workshop on Passivity. Participants: B. Brogliato, O. Egeland, B. Maschke. Heudiasyc, Compiègne. 25, 26 May 1998.
- Organizer with P. Kokotovic, M. Krstic, V. Kucera, S. Mondié and R. Castro of the V Workshop on Adaptive Control, Nonlinear Systems and Robotics. CINVESTAV, México December 1998.
- Member of the IPC of the European Control Conference, Portugal, 2001.
- Mini-course with I.Fantoni and B. Brogliato at the ECC 2001 Porto, Portugal.
- Member of the IPC of the Conférence Internationale Francophone d'Automatique, Lille, 5-8 July 2000.
- Member of the IPC of the IFAC Workshop on Adaptation and Learning in Control Signal Processing. Como, Italy, August 2001.
- Member of the IPC of the European Control Conference, Cambridge, 2003.
- Member of the IPC of the 2nd IFAC Symposium on Structure, System and Control, Oaxaca, Mexico, December 2004.
- Speaker at the Panel on New directions in Automatic Control.  
ECC 2001 Porto Portugal, organized by P. Albertos President of IFAC.

- Member of the IPC of 6th IFAC Symposium on Intelligent Autonomous Vehicles 2007, Toulouse, France.
- Member of the IPC of 3rd IFAC Symposium on System, Structure and Control, Iguassu Falls, Brazil October, 2007.
- Plenary speaker at the International Symposium on Biomimetics, Micro Air Vehicles and Unmanned Aerial Vehicles, MAV'08, Chiba University Japan. January 2008.
- Member of the IPC of the CDC 2008 (Conference on Decision and Control), Cancun, Mexico, December 2008.
- Invited to participate at the International Workshop on the Impact of Control: Past, Present, and Future, organized by A. Annaswamy, MIT. <http://workshop-impact-control-2009.lsr.ei.tum.de/>
- Member of the IPC of the CDC 2010 (Conference on Decision and Control), Atlanta USA, December 2010.
- Member of the IPC of the 14th International Conference on System Theory, Control and Computing, Bucarest Rumania, 2010.
- Invited to give a tutorial course on "Control of Aerial and underwater vehicles" at the 7th IEEE International Conference on Electrical Engineering, Computing Science and Automatic Control, Tuxtla Gutiérrez, Mexico. September 8-10, 2010.
- Chairman of the IPC of the 15th Joint International Conference on System Theory, Control and Computing – ICSTCC 2011, Sinaia, Rumania, October 14-16, 2011.
- Member of the IPC of 1st Workshop on Research, Development and Education on Unmanned Aerial Systems. Seville, 2011.

### 3.2 Editor in journals

- Associate editor of AUTOMATICA from March 1987 to January 2000.
- Associate editor of Int. Journal of Adaptive Control and Signal Processing (IJASP) since Octobre 1993.
- Invited editor of the special issue on Adaptive and Robust Control at IJASP, Vol. 2, No 4, December 1988.
- Invited editor of the special issue for the II Workshop on Adaptive Control, Nonlinear Systems and Robotics in IJASP, October 1993.
- Invited editor of the special issue for the IV Workshop on Adaptive Control, Nonlinear Systems and Robotics in IJASP, Vol 10, No 4 et 5, July-August 1996.

- Invited editor of the special issue for the V Workshop on Adaptive Control, Nonlinear Systems and Robotics in International Journal of Robust and Nonlinear Control, vol 10, 2000.

## 4 Funded projects

- Head of the project to create the International Research Unit UMI LAFMIA at CINVESTAV with CONACYT and CNRS as partners. UMI LAFMIA started on April 2008.
- Head of the project ROVA (Localization and Control of Flying Robots) funded by the Picardie Region in France. 2001-2004.
- Head of the Project BIROTAN in the MAV international contest organized by DGA and ONERA 2003-2005. 20 teams were funded.
- Head of the project Autonomous Aerial Vehicles funded by the french Picardie Region. 2004-2007.
- Head of a project funded by the french army (DGA), Design and construction of a vertical take off and landing plane. Project REI n° 04C0029. 2007-2009.
- Participation on the project Navigation with optical Flow funded by the Foundation for the Research on Aeronautics and Space. 2007-2010.
- Head of the project ALTO (Automatic Landing and Take Off), funded by the french Picardie Region 2009-2011.
- Coordinator for UTC in the network of the ANR project Demonstrator GLMAV (Gun Launch Micro Air Vehicle). The head of the project is P. Gnemmi of the Institut Saint-Louis. 2010-2012.
- Head of a projet (with J. Torres) with CGG Véritas on the use of mini submarines for oil prospection. 2011-2012.

## 5 Awards

- The PhD thesis of B. Brogliato was one of the three best thesis at INPG in 1992.
- The PhD thesis of P. Castillo was the best PhD thesis in Automatic Control for the French Club EEA in May 2005.

## 6 PhD Thesis supervised

1. J. Collado, CINVESTAV Mexico, June 1988. J. Collado is currently professor at the Department of Automatic Control, CINVESTAV, Mexico.
2. B. Brogliato (with I.D. Landau), LAG, France, January 1991. B. Brogliato is currently Director of Research at INRIA Rhône Alpes, Grenoble.
3. R. Garrido, UTC, France, November 1993. R. Garrido is currently professor at the Department of Automatic Control, CINVESTAV, Mexico.
4. Xiao-Hui Zhao, UTC, France, November 1993. Zhao is currently vice-Dean and Professor at University of Jilin China at the College of Telecommunication Engineering.
5. D. Suarez. UTC, France, November 1996. He is with IIE (Instituto de Investigaciones Electricas), Palmira Cuernavaca, Mexico.
6. Eduardo Gomez (with A. Pozniak) June 1999, CINVESTAV. E. Gomez currently professor at the University of La Salle, Mexico.
7. Dimitris Dimogianopoulos at UTC France on November 1999. He is professor at the University of Patras, Greece.
8. Rene Galindo (with A. Herrera and J.C. Martinez) at CINVESTAV on August 2000. He is currently professor at the University of Nuevo Leon, Mexico.
9. Isabelle Fantoni, UTC France, November 2000. She is presently CNRS researcher at UTC France.
10. Alejandro Dzul (with T. Hamel) UTC France, November 2002. He is currently professor at the Tecnological Institute of La Laguna, Mexico.
11. Juan Carlos Avila (with B. Brogliato) at LAG Grenoble France on September 2001. He is currently professor at the Tecnological Institute of Toluca, Mexico.
12. Pedro Castillo, UTC, France, March 2004. He is currently CNRS Researcher at UTC, France.
13. Amparo Palomino (with I. Fantoni) UTC, France on March 2005. She is currently professor at the University of Puebla Mexico.
14. Sergio Salazar, UTC, France October 2005. He is currently professor at the UMI LAFMIA CINVESTAV, Mexico.
15. David Lara (with C. Pegard) UTC, France, March 2007. He is currently professor at the Autonomous University of Tamaulipas, Mexico.



16. Anand Sanchez (with I. Fantoni) UTC, France, May 2007. He is currently professor at CINVESTAV Saltillo, Mexico.
17. F. Kendoul (with I. Fantoni) UTC, France, September 2007. He is currently CSIRO Researcher at Queensland Centre for Advanced Technologies, Brisbane, Australia.
18. Jorge dos Santos Ferreira (with A. Friboulet) UTC, France, February 2008. He is currently professor at União Brasileira de Educação e Cultura, Centro Universitário do Leste de Minas Gerais.
19. Juan Antonio Escareño, UTC, France, April 2008. He is currently postdoc at CEA, Paris.
20. Hugo Romero, UTC, France, July 2008. He is currently Professeur at the Hidalgo State University, Mexico.
21. Octavio Garcia, UTC, France, November 2009. He is currently postdoc at the UMI LAFMIA at CINVESTAV Mexico.
22. Alfredo Guerrero, UTC, France, December 2009. He is currently postdoc at Heudiasyc, UTC, France.
23. Jose Luis Rullan Lara (with S. Salazar) UTC, France 2011. He is currently professor at the University of Ciudad del Carmen, Mexico.
24. Jose Ernesto Gomez Balderas (with P. Castillo), UTC, France, November 2011. He is currently postdoc at Heudiasyc, UTC, France.
25. Luis-Rodolfo Garcia Carrillo (with C. Pegard), UTC, France September 2011. He is currently postdoc at the University of Santa Barbara USA.
26. Duc-Anh Ta (with I. Fantoni), UTC, France, December 2011.
27. Zizilia Zamudio (with J. Torres), CINVESTAV, Mexico. In preparation.
28. Victor Rosas (with J. Torres), CINVESTAV, Mexico. In preparation.
29. Ivan Tamanaja (with J. Torres), CINVESTAV, Mexico. In preparation.
30. Suresh Kumar (with R. Garrido), CINVESTAV, Mexico. In preparation.
31. Eduardo Steed Espinoza (with A. Malo), CINVESTAV, Mexico. In preparation.
32. Josue Hernandez (with J. Torres), CINVESTAV, Mexico. In preparation.
33. Gerardo Flores Colunga (with J. Escareno) UTC, France. In preparation
34. Coentim Chauffaut (with S. Salazar), UTC, France. In preparation
35. Alexandru Brezoescu (with P. Castillo), UTC, France. In preparation.

## 6.1 Journal publications

### References

- [P1] I.D. Landau, R. Lozano. Unification of discrete time explicit model reference adaptive control designs. *Automatica, (Regular paper)*, Vol. 17, pp. 595-611, July 1981.
- [P2] R. Lozano, I.D. Landau. Redesign of explicit and implicit discrete time model reference adaptive control schemes. *Int. Journal of Control*, Vol. 33, No 2, pp. 247-268, 1981.
- [P3] R. Lozano. Independent tracking and regulation adaptive control with forgetting factor. *Automatica*, Vol. 18, pp. 455-460, 1982.
- [P4] R. Lozano, I.D. Landau. Quasi-direct adaptive control for nonminimum phase plants. *JASC of ASME*, Vol. 104, No 4, 1982.
- [P5] R. Lozano. Convergence of recursive identification algorithms with forgetting factor. *Automatica*, Vol. 19, pp. 95-100, 1983.
- [P6] R. Lozano, G.C. Goodwin. A globally convergent adaptive pole placement algorithm without a persistency of excitation requirement. *IEEE Transactions of Automatic Control*, Vol. AC-30, No 8, pp. 795-798, August 1985.
- [P7] G.C. Goodwin, R. Lozano, D.Q. Mayne, R. Middleton. Rapprochement between continuous and discrete model reference control. *Automatica, (Regular paper)*, Vol. 22, No 2, March 1986.
- [P8] G.C. Goodwin, R.J. Evans, R. Lozano, R. Feik. Sinusoidal Rejection with application to helicopter flight data estimation. *IEEE Transactions on Acoustics, Speech and Signal Processing, (Regular paper)*, Vol. 34, No 3, pp. 479-484, juin 1986.
- [P9] R. Lozano, R. Ortega. Reformulation of the parameter identification problem for systems with bounded disturbances. *Automatica*, Vol. 23, No 2, pp. 247-251, March 1987.
- [P10] R. Ortega, R. Lozano. A note on direct adaptive control of systems with bounded disturbances. *Automatica*, Vol. 23, No 2, pp. 253-254, March 1987.
- [P11] O. Begovich, R. Ortega, R. Lozano, G. Fernandez. On the destabilizing effect of unmodeled plant delay in adaptive systems. *Control Theory and Advanced Technology*, Vol. 3, No 2, pp. 141-148, 1987.
- [P12] R. Ortega, R. Lozano. A globally stable adaptive controller for systems with delay. *Int. Journal of Control*, Vol. 47, No 1, pp. 17-23, 1988.

- [P13] R. Ortega, R. Kelly, R. Lozano. On global stability of adaptive systems using an estimator with parameter freezing. *IEEE Transactions on Automatic Control*, Vol. AC-34, No 3, pp. 343-346, March 1989.
- [P14] R. Lozano, J. Collado. Adaptive Control for Systems with bounded disturbances. *IEEE Transactions on Automatic Control*, Vol. AC-34, No 2, pp. 225-228, February 1989.
- [P15] R. Lozano. "Robust adaptive regulation without persistent excitation". *IEEE Transactions on Automatic Control*, (Regular paper), pp. 1260-1267, December 1989.
- [P16] R. Lozano, J. Collado, S. Mondie. Model reference robust adaptive control without a priori knowledge of the high frequency gain. *IEEE Transactions on Automatic Control*, pp. 71-78, January 1990.
- [P17] R. Lozano, C. Canudas de Wit. Passivity based adaptive control for mechanical manipulators using LS-types estimation. *IEEE Transactions on Automatic Control*, Vol 35, No 12, pp. 1363-1365, December 1990.
- [P18] R. Lozano, S.M. Joshi. Strictly positive real transfer functions revisited. *IEEE Trans. on Automatic Control*, Vol 35, No 11, pp. 1243-1245, November 1990.
- [P19] B. Brogliato, I.D. Landau, R. Lozano. Adaptive motion control of robot manipulators : A unified approach based on passivity. *Int. J. of Robust and Nonlinear Control*, Vol. 1, pp. 187-202, 1991.
- [P20] R. Lozano. "Singularity-free adaptive pole placement without resorting to persistency of excitation. Detailed Analysis for first order systems". *Automatica*, (Regular paper), pp. 27-33, January 1992.
- [P21] R. Lozano, B. Brogliato. "Adaptive Control of a simple nonlinear system without a-priori information on the plant parameters". *IEEE Transactions on Automatic Control*, (Regular paper), vol. 37, No 1, pp. 30-37, January 1992.
- [P22] R. Lozano, B. Brogliato. " Adaptive Control of robot manipulators with flexible joints. *IEEE Transactions on Automatic Control*, (Regular paper), pp. 174-181, February 1992.
- [P23] B. Brogliato, A. Trofino-Neto, R. Lozano. Robust Adaptive Control of a class of nonlinear first order systems. *Automatica*, Vol. 28, No 4, pp. 795-801, July 1992.
- [P24] B. Brogliato, R. Lozano. Passive least squares type estimation algorithm for direct adaptive control. *Int. Journal of Adaptive Control and Signal Processing*, vol. 6, pp. 35-44, 1992.
- [P25] R. Lozano, B. Brogliato, I.D. Landau. Passivity and global stabilization of cascaded nonlinear systems. *IEEE Transactions on Automatic Control*, Vol. 37, No 9, pp. 1386-1389, September 1992.

- [P26] R. Lozano, B. Brogliato. Adaptive hybrid force-position control for redundant manipulators. *IEEE Transactions on Automatic Control*, Vol. 37, No 10, pp. 1501-1505, Octobre 1992.
- [P27] R. Lozano, J.M. Dion, L. Dugard. Singularity-free adaptive pole placement using periodic controllers. *IEEE Transactions on Automatic Control*, Vol. 38, No 1, January 1993.
- [P28] R. Lozano, R. Garrido. Model reference adaptive control with unknown high frequency gain. *Automatica*, Vol 29, No 6, pp 1565-1569, 1993.
- [P29] R. Garrido, R. Lozano, D.A. Suarez. MRAC with unknown relative degree. *Int. J. of Adaptive Control and Signal Processing*, Vol 7, No 5, September-October 1993.
- [P30] B. Brogliato, R. Lozano, I.D. Landau. New relationships between Lyapunov functions and the passivity theorem. *Int. J. of Adaptive Control and Signal Processing*, Vol 7, No 5, pp 353-366, September-October 1993.
- [P31] R. Lozano, X.H. Zhao. "Adaptive pole placement without excitation probing signal". *IEEE Transactions on Automatic Control, (Regular paper)*, Vol 39, No 1, pp 47-58, January 1994.
- [P32] B. Brogliato, R. Lozano. Adaptive Control of systems of the form  $\dot{x} = \theta_1^T f(x) + \theta_2^T g(x)u$  with reduced knowledge of the plant parameters. *IEEE Transactions on Automatic Control*, Vol 39, No 8, pp 1764-1768, August 1994.
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- [P34] R. Lozano, A. Osorio, J. Torres. Adaptive Stabilization of non-minimum phase continuous-time systems. *IEEE Transactions on Automatic Control*, Vol 39, No 8, pp 1748-1751, August 1994.
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- [P37] R. Lozano, S. Joshi. Reply to Comments on "Strictly positive real transfer functions revisited. *IEEE Transactions on Automatic Control*, Vol 40, No 10, pp1799-1800, October 1995.
- [P38] B. Brogliato, R. Lozano. Correction to "Adaptive control of robot manipulators with flexible joints". *IEEE Transactions on Automatic Control*, Vol AC-41, No 6, pp 920-922, June 1996.

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- [P42] A. Ailon, R. Lozano and M. Gil. Point-to-point regulation of a robot with flexible joints including effects of actuator dynamics. *IEEE Transactions on Automatic Control*, Vol 42, No 4, pp 559-564, April 1997.
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- [P45] M. de Mathelin, R. Lozano. Robust adaptive identification of slowly time-varying parameters with bounded disturbances. *Automatica*, Vol 35, No 7, pp 1291-1306, July 1999.
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- [P53] A. Ailon, R. Lozano, M.I. Gil, Iterative Regulation of an Electrically Driven Flexible-Joint Robot with Model Uncertainty. *IEEE Transactions on Robotics and Automation*, vol 16, No 6, pp 863-870, December 2000.
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- [P55] S. Niculescu, R. Lozano. On the passivity of linear delay systems. *IEEE Transactions on Automatic Control*, pp460-464, April 2001.
- [P56] R. Mahony and R. Lozano. Generalized Forgetting Functions for On-line Least Squares Identification of Time-Varying Systems. *International Journal of Adaptive Control and Signal Processing*, Vol. 15, No 4, June 2001.
- [P57] J. Collado, R. Lozano, R. Johansson. On Kalman-Yakubovich-Popov lemma for stabilizable systems. *IEEE Transactions on Automatic Control*, Vol 46, No 7, July 2001.
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- [P67] A. Dzul, R. Lozano, P. Castillo. Adaptive control for a radio-controlled helicopter in a vertical flying stand. *Int. J. of Adaptive Control and Signal Processing*, Volume 18, Issue 5, pp.473-485, June 2004.
- [P68] R. Lozano, P. Castillo, A. Dzul. Global stabilization of the PVTOL: real-time application to a mini-aircraft. *International Journal of Control*, Vol. 77, No 8, PP 735-740, May 2004.
- [P69] R. Lozano, P. Castillo, P. Garcia, A. Dzul. Robust prediction-based control for unstable delay systems. Application to the yaw control of a mini-helicopter. *Automatica*, Vol 40, Number 4, pp 603-612, avril 2004.
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