

# Chapitre 15

## Production scientifique : publications

### Ouvrages, Participation aux ouvrages

- [1] C.Canudas-de-Wit (1988) "Adaptive Control in Partially Known Systems : theory and applications", Elsevier Publishers, Series in Automation and Control, Vol. 7. Book of 264 pages.
- [2] C.Canudas-de-Wit Ed.(1991) "Advanced Robot Control", Springer-Verlag, Series in Automation and Control, Vol. 162.
- [3] C. Canudas-de-Wit, B. Siciliano and G. Bastin (Eds.) "Theory of Robot Control", 12 author book (C. Canudas-de-Wit one of them, and scientific coordinator) of 550 pages. Springer, Communications and Control Engineering Series, 1996.
- [4] Canudas-de-Wit C. (Ed.) "Commande Des Moteurs Asynchrones Volume 1 : Modelisation Controle Vectoriel Et DTC." Hermes, Série ICC Systèmes Automatisés, 2000.
- [5] Canudas-de-Wit C. (Ed.) "Commande Des Moteurs Asynchrones Volume 2 : Optimisation Discretisation Et Observateurs." Hermes, Série ICC Systèmes Automatisés, 2000.
- [6] Canudas-de-Wit, C. H. Khenouf, O.J. Sordalen and C. Samson (1993) "Nonlinear Control Design for Mobile Robots", Advanced Mobile Robots- Theory and Applications : International Perspectives, Zheng(Ed.) World Scientific Publisher .
- [7] C. Canudas-de-Wit(1997) "Trends on Mobile Robot and Vehicle control", Control problems in Robotics and Automation : future directions, Springer-Verlag, Lecture notes in Control and Information Science 230 (B. Siciliano and K ; Valavanis, Eds.), pp. 151-172, Dec. 1997.
- [8] C. Canudas de Wit (1997) "Invariant manifolds : a tool for stabilization", Chapt. 17 , of Modelling and Control of Mechanical Systems. Imperial College Press, Chapt. 17, pp. 253-273, June 1997.
- [9] C. Canudas de Wit, "Modélisation et Observation des forces d'interaction rue/sol". Dans "Modelisation Et Commande De Vehicules Automobiles", Actes, Ecole d'Ete d'Automatique de Grenoble, 9-13 september, 2002. ( Eds. Canudas De Wit C., Sename O.).
- [10] Canudas-de-Wit C., Tsiotras P., Claeys X., Yi J., Horowitz R.(2001) "Friction Tire/Road Modeling, Estimation And Optimal Braking Control." in Nonlinear and Hybrid Systems in Automotive Control, R. Johansson and A. Rantzer( Ed.), Editions Springer, 2002.

- [11] Grognard F., Canudas-De-Wit C. (2005) “Virtual Constraints for the Orbital Stabilization of the Pendubot” (2004). Chapt. Book in Nonlinear and adaptive control : theory and applications for the users. Editor : A. Astolfi. In press.
- [12] E. Witrant, D. Georges, C. Canudas-de-Wit, and M. Alamir (2007), ”On the use of state predictors in networked control systems,” in : Applications of Time-Delay Systems, Chapt. book, Springer. pages 17–36. Springer, March 2007.
- [13] Emmanuel Witrant, Didier Georges, Carlos Canudas De Wit, and Olivier Sename (2007). Stabilisation des systèmes commandés par réseau : une approche prédictive. In J.P. Richard and T. Divoix, editors, *Systèmes commandés en réseaux*, Traité IC2, pages 83–124. Lavoisier - Hermès, 2007.
- [14] Pietro Dolcini, Carlos Canudas De Wit, and Hubert Bechart (2010). *Dry Clutch Control for Automotive Applications*. Advances in Industrial Control. Springer, October 2010.
- [15] Nicolas Cardoso De Castro, Federica Garin, and Carlos Canudas De Wit (2014). *Optimal radio-mode switching for Wireless Networked Control*. In : *Information and Control in Networks*, Lecture Notes in Control and Information Sciences, Springer, pp. 87-119, Vol. 450, 2014.

## Journaux avec comité de lecture

- [1] Canudas-de-Wit, C., K.J. Astrom and K. Braum (1987) ”Adaptive Compensation in DC Motor Drives, IEEE Transactions on Robotics and Automation, vol RA-3, No.6, Dec 1987.
- [2] Agarwal, M and C.Canudas-de-Wit,(1986) ”On-line estimation of Time delay and Continuous time process parameters”, International Journal of Control (1987), vol. 46, No. 1, pp. 295-311.
- [3] Canudas-de-Wit, C., K.J. Astrom and N. Fixot (1990) ”Computed Torque Control via Nonlinear Observer”. To appear in International Journal in Adaptive Systems and Process signal, Special Issue in 1990.
- [4] Canudas-de-Wit, C. and J.J-E. Slotine (1990) ” Sliding Observers for Robot Manipulators”. Automatica, Vol.27. No. 5 pp 859-864, 1991.
- [5] Canudas-de-Wit, C. and J. Carrillo (1990) ”A Modified EW-RLS algorithm for system with bounded disturbances”. Automatica, Vol. 26, No. 3, pp. 599-606, 1990.
- [6] Canudas de Wit, C., P. Noel, A. Aubin and B. Blogliato (1991) ”Adaptive Friction Compensation : low velocities”. The International Journal on Robotics Research, Vol 10, No.3, June 1991.
- [7] Canudas de Wit, (1989) ”Experimental Results on Adaptive Friction Compensation in Robot Manipulators : low velocities”, Lecture Notes in Control and Information Sciences, Vol. 139, Edited by V. Hayward and O. Khatib, pp. 196-214.
- [8] Canudas-de-Wit, C. and N. Fixot (1991) ”Robot Control via robust state estimated feedback”, IEEE Transaction on Automatic Control, Vol. 36, No.12, pp.859-864, june 1991. [J14] Canudas-de-Wit, C. and N. Fixot (1992) ”Adaptive Control of Robots via velocity estimate feedback”, IEEE Transaction on Automatic Control, Vol.36, n0.8, Août, 1992.

- [9] Canudas-de-Wit, N. Fixot and K.J. Astrom (1992) "Robot Control via nonlinear state feedback", IEEE Robotics and Automation, Vol.8, No.1, Feb. 1992.
- bibitemJ16 Lozano-Leal, R. and C. Canudas-de-Wit (1990) "Passivity Based-Adaptive Control for Mechanical Manipulators using LS-type estimation" IEEE Transaction on Automatic Control, Vol.35, No.12, pp. 1363-1365, 1990.
- [10] Canudas-de-Wit, (1993). "Robust control for servo-mechanisms under inexact friction compensation" Automatica, Vol.29, No.3, pp.757-761, 1993.
- [11] R. Ortega, Canudas-de-Wit, C. and S.I. Seleme (1993) "Nonlinear Control of Induction Motors : Torque Tracking with Unknown Load Disturbances", IEEE Transaction on Automatic Control, Vol. 38, No11, Nov. 1993.
- [12] Canudas-de-Wit, C. and O.J. Sordalen (1992) "Exponential Stabilization of Mobile Robots with Nonholonomics Constraints", IEEE Transaction on Automatic Control, Vol. 37, No.11, Nov. 1992.
- [13] O.J. Sordalen and Canudas-de-Wit, C. (1993) "Exponential Control Law for a Mobile Robot : Extension to Path Following", IEEE Transaction on Robotics and Automation Dec. 1993, Vol.9, No.6, pp 837-841.
- [14] B. Amrstrong-Hélouvry, Pierre Dupont and C. Canudas-de-Wit (1994) "A Survey of Models, Analysis Tools and Compensation Methods for the Control of Machines with Friction", Automatica, Vol.30, No.7, pp 1038-1138, 1994.
- [15] C. Canudas de Wit (1993) "Application of a bounded Error on-line Estimation Algorithm to Robotics Systems", International Journal of Adaptive and Signal processing, Special Issue on bounded-error estimation : Issue 1, Vol.8, No 1, pp 73-84, Jan-Feb, 1994.
- [16] C. Canudas de Wit, H. Olsen, K.J. Astrom and P. Lischinsky (1995) "A New Model for control of System with Friction", IEEE Transaction on Automatic control, Vol. 40, No.3, March 1995.
- [17] R. Ortega, C. Canudas-de-Wit and Seleme S.I. (1993) "Nonlinear control of induction motors : torque tracking with unknown load disturbance", IEEE Transactions on Automatic Control, Vol.38, No.11, Nov. 1993, pp.1675-1680.
- [18] B. Amrstrong-Hélouvry, Pierre Dupont and C. Canudas-de-Wit (1994) "Friction in Servo Machines : analysis and control methods". Friction-induced vibration" (Ed. Ibrahim RA. Rivin E.), Applied Mechanics Reviews, Vol. 47, No7, July 1994, ASME Reprint No AMR147, pp. 275-307.
- [19] Canudas-de-Wit, C., Lischinsky P, (1996) "Parameter estimation of dynamic friction model and control experiments", International Journal of Adaptive Control, special issue on Mechanical Systems with non-smooth nonlinearities (G. Tao and C. Canudas-de-Wit, Ed.), Vol11, no.1, Dec. 1996.
- [20] C. Canudas-de-Wit, Ndoudi-Likoho A.D. and M. Micaelli (1997), "Feedback Control for a Train Like Vehicle", International Robotic Research, vol.16, no3, June 1997. pp.300-319.
- [21] Oelen W., Berghuis, H., Nijmeijer H. and Canudas de Wit, C. (1995) "Hybrid stabilizing control on a real mobile robot".IEEE Robotics and Automation Journal Magazine, Vol. 2, No. 2, 1995, pp. 162-3.

- [22] M. Perrier, C. Canudas-de-Wit (1996),. "Robust Nonlinear control for subsea robots : design and experiments", Special issue on Subsea Robots, International Journal of Autonomous Robots, 3, pp.195-212, 1996.
- [23] C. Canudas-de-Wit and S.I. Seleme (1997) "Lyapunov-Based Torque Control Design for Induction Motors : the minimum energy approach", Automatica, Vol 33 : No.1, pp.63-79, 1997.
- [24] C. Canudas-de-Wit, B. Brogliato (1997) "Direct Adaptive impedance control", Automatica, Vol. 33, no4, pp. 643-649 1997.
- [25] Olsson H., Åström K.J., Canudas-de-Wit C., Gäfvert M., Lischinsky P. (1998) "Friction models and friction compensation" European Journal of Control, No.4, 1998, pp. 176-195.
- [26] C. Canudas-de-Wit (1998) "Comments on : a new model for control of systems with friction", IEEE Transaction on Automatic Control. IEEE Transactions on Automatic Control, Vol. 43, No. 8, août 1998, pp. 1189-1190.
- [27] Lischinsky P., Canudas-de-Wit C., Morel G. "Friction Compensation For An Industrial Hydraulic Robot." IEEE Control Systems, Vol. 19, non 1, février 1999, pp. 25-33.
- [28] L. Villani, Canudas-de-Wit, C. and B. Brogliato (1999) "An Exponentially Stable Adaptive Force/Position Control for Robot Manipulators", IEEE Transaction on Automatic Control. IEEE Transactions on Automatic Control, Vol. 44, No. 4, 1999, pp. 798-802.
- [29] Canudas-de-Wit, C. and J. Ramirez (1999) "Optimal torque control for current-fed Induction motors", IEEE Transaction on Automatic Control. Vol. 44, No. 5, mai 1999, pp. 1084-1089.
- [30] D. Georges, C. Canudas-de-Wit and J. Ramirez (1999) "Nonlinear  $H_2$  and  $H_\infty$  Optimal controllers for current-fed induction motors", IEEE Transaction on Automatic Control. Vol. 44, No. 7, juillet 1999, pp. 1430-1435.
- [31] Canudas-de-Wit C., Horowitz R., Tsiotras (1999) P. "Model-Based Observers For Tire/Road Contact Friction Prediction." Partie de l'ouvrage "New Trends in Nonlinear Observer Design", NIJMEIJER H. and FOSSEN T.I. (Eds), juin 1999.
- [32] Canudas-de-Wit and Ndoudi-likoho, A.D. (2000) "Nonlinear Control of Convoy-Like vehicles", Automatica, Vol. 36, No. 3, mars 2000, pp. 457-463.
- [33] Canudas-de-Wit C., Ramirez J.(2000) "Commande A Energie Minimale." Chapitre 2 de "Commande des moteurs asynchrones", Vol. 2 "Optimisation, discrétion et observateurs", sous la direction de C. Canudas-de-Wit, Ed. Hermès, 2000, 288 p., ISBN : 2-7462-0112-7.
- [34] Canudas-de-Wit C., Praly L.(2000) "Adaptive Eccentricity Compensation." IEEE Control Systems Technology, vol. 8, No. 5, septembre 2000, pp. 777-787.
- [35] Villani L., Natale C., Siciliano B., Canudas-de-Wit C.(2000) "An Experimental Study Of Adaptive Force/Position Control Algorithms For An Industrial Robot." IEEE Transactions on Control Systems Technology, vol. 8, No. 5, septembre 2000, pp. 777-787.
- [36] Canudas-de-Wit C., Olguin Diaz E., Perrier M. (2000) "Nonlinear Control Of An Underwater Vehicle/Manipulator System With Composite Dynamics." IEEE Transactions on Control Systems Technology, vol. 8, No. 6, décembre 2000, pp. 948-960.

- [37] Pervozvanski A., Canudas-de-Wit C.(2001) “Vibrational Soothing In Systems With Dynamic Friction.” *Automatica*, Vol. 38, No. 1, pp. 105-114, 2001.
- [38] Garcia E., Gonzalez-De-Santos P., Canudas-De-Wit C.(2002)“ Friction In High-Geared Robotic Systems”. *International Journal of Robotic research*,Vol 21, No. 9 Sept. 2002, pp.761-771.
- [39] C. Chevallereau, G. Abba, Y. Aoustin, F. Plestan, E.R. Westervelt, C. Canudas-de Wit, and J.W. Grizzle (2003).“Rabbit : A Testbed for Advanced Control Theory”. *IEEE Control Systems Magazine*, Oct 2003, Vol. 23 No. 5.
- [40] E. Westervelt, J.W. Grizzle, and C. Canudas-de Wit (2003). “Switching and PI control of walking motions of planar biped walkers.” *IEEE Transactions on Automatic Control*, Vol. 48, N0. 2, February 2003, pp. 308-312 2003.
- [41] Canudas-de-Wit C., Tsiotras P., Velenis E., Basset M., Gissinger G. (2003), “Dynamic Friction Models For Raod/Tire Longitudinal Interaction”. *Vehicle System Dynamics*, Vol. 39, No.3, March 2003.
- [42] Grognard F., Canudas-De-Wit C. (2004) “Design of Orbitally Stable Zero Dynamics for a Class of Nonlinear Systems” (2004). *Systems and Control Letters*, No.51 Issue 2, pp. 89–103, Fev. 2004.
- [43] Canudas-de-Wit C (2004). “On the concept of virtual constraints as a tool for walking robot control and balancing ”. *Annual Reviews in Control*, 28 (2004), pp. 157-166. (Elsevier).
- [44] Attia A., M. Alamir and C. Canudas de Wit (2005), “Voltage Collapse Avoidance In Power Systems : A Receding Horizon Approach”, *Int. Automation and Soft Computing*; special issue on power systems, 2005.
- [45] Velenis E., Tsiotras P., Canudas-De-Wit C. and M. Sorine (2005) “Dynamic tyre friction models for combined longitudinal and lateral vehicle motion”. *Vehicle system dynamics*, Volume 43, Number 1, January 2005.
- [46] Shiriaev, A., J.-W. Perram, C. Canudas-de-Wit (2005) “Constructive Tool For Orbital Stabilization of Underactuated Nonlinear Systems : Virtual Constraints Approach”. *IEEE Trans. on Automatic Control* (regular paper), Vol. 50, No. 8 pp1164-1177, Sept. 2005.
- [47] C. Canudas-de-Wit, , H. Bechart, X. Claeys, P. Dolcini, and J.J. Martinez Molina (2005), ”Fun-to-drive by feedback” , *European Journal of Control : Fundamental issues in Control* (special issue). Dec. 2005.
- [48] A. Viguria, A. Prieto, M. Fiacchini, R. Cano, F.R. Rubio, J. Aracil y C. Canudas-de-Wit. *Desarrollo y experimentación de un vehículo basado en péndulo invertido (PPCar)*. *Revista Iberoamericana de Automática e Informática Industrial (RIAI)*, Vol 3-4, pp 53-62, 2006.
- [49] Ya-Jun Pan, Carlos Canudas De Wit, and Olivier Sename. A New Predictive Approach for Bilateral Teleoperation With Applications to Drive-by-Wire Systems. *IEEE Transactions on Robotics*, 22 :1146–1162, 2006.
- [50] Sid Ahmed Attia, Mazen Alamir, and Carlos Canudas De Wit (2006). Voltage collapse avoidance in power Systems : A Receding-Horizon Approach. *Autosoft journal*, 12 :1–14, 2006.

- [51] John Jairo Martinez Molina and Carlos Canudas De Wit (2007). A Safe Longitudinal Control for Adaptive Cruise Control and Stop-and-Go Scenarios. *IEEE Transactions on Control Systems Technology*, 15(2) :246–258, March 2007.
- [52] Emmanuel Witrant, Carlos Canudas De Wit, Didier Georges, and Mazen Alamir. Remote Output Stabilization via Communication Networks with a Distributed Control Law. *IEEE Transactions on Automatic Control*, 52(8) :1480–1485, August 2007.
- [53] Carlos Canudas De Wit and R. Kelly (2007). Passivity Analysis of a motion control for robots manipulators with dynamic friction. *Asian Journal of Control*, 9(9) :30–36, 2007.
- [54] Pietro Dolcini, Carlos Canudas De Wit, and Hubert Bechart. Lurch avoidance strategy and its implementation in AMT vehicles. *Mechatronics*, 18(5-6) :289–300, June 2008.
- [55] Carlos Canudas De Wit, Francisco Rubio, and Miguel Corchero. DOSKIL : A New Mechanism for Controlling Stick-Slip Oscillations in Oil Well Drillstrings. *IEEE Transactions on Control Systems Technology*, 16(6) :1177–1191, November 2008.
- [56] Karl Johan Åström and Carlos Canudas De Wit. Revisiting the LuGre friction model. *IEEE Control Systems Magazine*, 28(6) :101–114, December 2008.
- [57] Carlos Canudas De Wit, Fabio Gomez Estern, and Francisco Rubio (2009). Delta-Modulation Coding Redesign for Feedback-Controlled Systems. *IEEE Transactions on Industrial Electronics*, 56(7) :1–20, June 2009.
- [58] Carlos Canudas De Wit and Jonathan Jaglin. Energy-aware and entropy coding for Networked Controlled Linear Systems. *International Journal of Robust and Nonlinear Control*, 19(16) :1851–1870, 2009.
- [59] Carolina Albea-Sanchez, Francisco Gordillo Alvarez, and Carlos Canudas De Wit. Adaptive Control Design for a Boost Inverter. *Control Engineering Practice*, 19(1) :32–44, September 2010.
- [60] Fabio Gomez-Estern, Carlos Canudas De Wit, and Francisco Rubio. Adaptive Delta Modulation in Networked Controlled Systems With bounded Disturbances. *IEEE Transactions on Automatic Control*, 56(1) :129–134, January 2011.
- [61] Carolina Albea-Sanchez, Francisco Gordillo Álvarez, and Carlos Canudas De Wit. High Performance Control Design for Dynamic Voltage Scaling Devices. *IEEE Transactions on Circuits and Systems. Part I, Regular Papers*, 58(12) :2919–2930, July 2011.
- [62] Carolina Albea-Sanchez, Francisco Gordillo Álvarez and Carlos Canudas De Wit. Robust Saturated Control for Low-Power Circuits. *IEEE Transactions on Control Systems Technology*, 21(2) :530-537, March.2013
- [63] Carlos Canudas-de-Wit and Javier Aracil, and Francisco, Gordillo and Francisco Salas (2014) The oscillations killer : a mechanism to eliminate undesired limit cycles in a class of nonlinear systems *Int. J. Robust Nonlinear Control*, 24 : 39–53. doi : 10.1002/rnc.2873
- [64] Ruggero Fabbiano, Carlos Canudas-de-Wit, and Federica Garin (2014). Source Localization by Gradient Estimation Based on Poisson Integral. *Automatica*, Elsevier, 2014, 50 (6), pp. 1715-1724

- [65] Lara Briñon Arranz, Alexandre Seuret, and Carlos Canudas-de-Wit Cooperative Control Design for Time-Varying Formations of Multi-Agent Systems *IEEE Transactions on Automatic Control*, 2014, 59 (8), pp. 2283-2288

## Conférences

- [1] Canudas-de-Wit, K.J. Aström and K. Braum (1986) "Adaptive Compensation in DC Motor Drives, IEEE Conference on Robotics and Automation, San Fransisco, Cal. U.S.A., April 1986.
- [2] Canudas de Wit, and Van den Bossche (1986) : "Adaptive Control of a Flexible Arm with Explicit Estimation of the Payload Mass and Friction", Int. Symposium on Theory of Robots, Vienna, Austria, Dec. 1986
- [3] Canudas-de-Wit, C. (1986) "Recursive Estimation of Continuous Time Process Parameters" 25th CDC, Athens, Greece, Vol. 3. pp. 2036-2042
- [4] Agarwal, M and Canudas-de-Wit, C. (1986) "On-line estimation of Time delay and Continuous time process parameters", ACC'86 Conference, Seattle, USA.
- [5] Canudas-de-Wit, C. and Lys, O. (1987) "Robust Control and Parameters Estimation in Robots with Flexible Joints", IEEE Conference on Robotics and Automation, April 1988, pp. 324-329.
- [6] Canudas-de-Wit, C. and J. Carrillo (1988) "A Modified EW-RLS algorithm for system with bounded disturbances". IFAC Symposium on System Parameters Identification", China, 1888.
- [7] Canudas-de-Wit, C., P. Noel, A. Aubin and B. Brogliato (1989) "Adaptive Friction Compensation : low velocities". IEEE Conference on Robotics and Automation, Scottsdale, Arizona, USA, 1989.
- [8] Canudas-de-Wit, C. and J.J-E. Slotine (1989). "Sliding Observers for Robot Manipulators" IFAC Symposium on Nonlinear Control System Design, Capri, Italy, August 1989.
- [9] Canudas-de-Wit, C., K.J. Astrom and N. Fixot (1989) "Computed Torque Control via Nonlinear Observer", Presented in Worshop in Nonlinear Adaptive Systems, Merida, Mexico, May, 1989 (invited).
- [10] Canudas-de-Wit, C., K.J. Astrom and N. Fixot (1989) "Robot Control via Nonlinear Observers", Presented in MTNS'89, Amsterdam, Holland. To appear in the proceeding, edited by Springer-Verlag. (invited)
- [11] Canudas de Wit, (1989) "Experimental Results on Adaptive Friction Compensation in Robot Manipulators", First International Symposium in Experimental Robotics Montreal, Canada, June 19-21, 1989 (invited).
- [12] Canudas-de-Wit, C. and V. Seront (1990). "Robust Adaptive Friction Compensation" IEEE-Conference on Robotics and Automation, May 13, Cincinnati, Ohio, 1990.
- [13] Lozano-Leal, R. and C. Canudas-de-Wit (1990) "Passivity Based-Adaptive Control for Mechanical Manipulators using LS-type estimation" ACC'90, conference, U.S.A. June 1990.

- [14] Canudas-de-Wit, C. and N. Fixot (1990) "Robot Control via robust state estimated feedback", Conference on New Trends in System Theory", Genova, Italy, July 1990. (invited)
- [15] Canudas-de-Wit, C. and N. Fixot (1990) "Robot Control using only position feedback", Conference on Analysis of Controlled Dynamical Systems, Lyon France, July, 1990. (invited)
- [16] Canudas-de-Wit, C. and N. Fixot (1990) "Trajectory Tracking in Robot Manipulators via discontinuous velocity estimate feedback", Latin American Congress on Automatics (IFAC-AMCA), Dec. 1990 (invited).
- [17] C.Canudas-de-Wit, and A. Aubin (1990) "Parameter Identification of Robot Manipulator via Sequential Hybrid Estimation Algorithms", IFAC'90 congress, Tallinn, URSS, August 1990.
- [18] Nielsen, L Canudas-de-Wit and Hagander (1990). " Controllability Issues of Robots near Singular Configurations", Advanced robot kinematics conference, Linz, Austria 1990.
- [19] Canudas-de-Wit, C. and N. Fixot (1990) "Adaptive Control of Robots via velocity estimate feedback", IEEE Conference on Robotics and Automation, Sacramento, Cal. April 1990.
- [20] Canudas-de-Wit, C. and R. Roskam (1990) "Path Following of a 2-DOF Mobile Robot under Path and Input Constrains", IEEE Conference on Robotics and Automation, Sacramento, Cal. April 1990.(invited)
- [21] C.Canudas-de-Wit, and A. Aubin (1990) " Robot Parameter Identification via Sequential Hybrid Estimation Algorithms : stability analysis", IEEE Conference on Robotics and Automation, Sacramento, Cal. April 1990.
- [22] Nielsen, L Canudas de Wit and Hagander (1990). " Controllability of Robots Manipulators near Kinematic Singularities", IEEE Conference on Robotics and Automation, Sacramento, Cal. April 1990.
- [23] Canudas-de-Wit, C. and O.J. Sordalen (1991) "Exponential Stabilization of Mobile Robots with Nonholonomics Constraints", IEEE Conference on Decision and Control, Brighton England, Dec. 1991
- [24] Canudas-de-Wit, C. and O.J. Sordalen (1992) "Examples of Piecewise Smooth Stabilization of Driftless NL Systems with less Inputs than States", IFAC Congress on Nonlinear Systems NOLCOS, Bordeaux, France June, 1992. (invited)
- [25] O.J. Sordalen and Canudas-de-Wit, C. (1992) "Exponential Control Law for a Mobile Robot : Extention to Path Following", IEEE congress on Robotics and Automation, Nice, France May, 1992.
- [26] O.J. Sordalen and Canudas-de-Wit, C. (1992) "Path Following and Stabilization of a Mobile Robot", IFAC Congress on Nonlinear Systems NOLCOS, Bordeaux, France June, 1992.
- [27] R. Ortega, Canudas-de-Wit, C. and S.I. Seleme (1992) "Nonlinear Control of Induction Motors : Torque Tracking with Unknown Load Disturbances", American Control Conference (ACC), Chicago, Illinois, June, 1992
- [28] C. Canudas-de-Wit, R. Ortega, and S.I. Seleme (1992) "Robot Motion Control using Induction Motor Drives", IEEE conference on Robotics and Automation, , 2-7 May 1993, Atlanta U.S.A.



- [29] C. Canudas-de-Wit and S.I. Seleme (1993) "Lyapunov-Based Torque Control Design for Induction Motors : the minimum energy approach", IFAC'93, Australia, July,1993.
- [30] O.J. Sordalen, O. Egeland and Canudas-de-Wit, C. (1992) "altitude stabilisation with a nonholonomic constraint", DCD Tucson Arizona, Dec. 1992, pp. 1610-1611.
- [31] A. NDoudi-Likoho, S.I. Seleme and C. Canudas-de-Wit (1993) "Full adaptive control of induction motors", ECC'93, Holland.
- [32] C. Canudas-de-Wit H. Olson, K.J. Astrom and P. Lischinsky (1993) "Dynamic Friction Models and control Design" ACC-93, San Francisco, June 2-4, 1993 (invited).
- [33] C. Canudas-de-Wit D. Williamson and M. R. Bachmayer (1993) "Performance Oriented Robust Control for a Class of Mechanical Systems : a Study Case", IEEE/SMC'93 Conference, Le Touquet-France, October 17-20, 1993.
- [34] D. Williamson and C. Canudas-de-Wit (1993) "Performance Oriented Robust Control for Ridig Robot Manipulator", CDC'93, San Antonio, U.S.A.
- [35] C. Canudas de Wit, B. Brogliato and C.R. Jhonson (1993) "Identification of Continuous-Time Systems with Partially-Known State-Dependent Disturbances", IFAC 1993 World Congress, Sydney Australia, 18-23 July 1993. (invited)
- [36] C. Canudas-de-Wit, Ndoudi-Likoho A.D. and M. Micaelli (1994) "Feedback Control for a Train Like Vehicle", IEEE Congress on Robotic and Automation, San Diego 1994.
- [37] M. Perrier, V. Rigaud, C. Canudas-de-Wit and R. Bachmayer (1994),. "Performance Oriented robust nonlinear control for subsea robots : experimental validation", IEEE Congress on Robotic and Automation, San Diego 1994.
- [38] C. Canudas-de-Wit, Ndoudi-Likoho (1994) "Nonlinear control for a convoy-like vehicle", IFAC SYROCO, 19-21 Sept. 1994, Capri, Italy. (invited)
- [39] Seleme, I, E. Mendes C. Canudas-de-Wit and A. Razek (1993) "Experimental validation of the minimum energy approach for induction motor control", IEEE/SMC'93 Conference, Le Touquet-France, October 17-20, 1993 (invited).
- [40] C. Canudas-de-Wit, B. Brogliato (1994) "Direct Adaptive impedance control", IFAC SYROCO, 19-21 Sept. 1994, Capri, Italy.
- [41] E. Mendes, Seleme, I, C. Canudas-de-Wit and A. Razek (1993) "Robust Torque Control of Induction Motors with Poxer Factor Optimization : experimental evaluation", IECON'94, Bologne (Italy), Sept. 1994.
- [42] Oelen W., Berghuis, H., Nijmeijer H. and Canudas-de-Wit, C. (1994) "Implementation of a hybrid stabilizing controller on a mobile robot with two degrees of freedom", IEEE Congress on Robotic and Automation, San Diego 1994.
- [43] Canudas-de-Wit, C., Berghuis, H., Nijmeijer H. (1994) "Practical stabilization of nonlinear systems in chained form , CDC'94, Orlando, Florida, USA, Dec. 1994. (invited)
- [44] Seleme, S.I., Petersson M. and Canudas-de-Wit, C. (1994) "The torque tracking of induction motors via efficiency optimization". CDC'94, Orlando, Florida, USA, Dec. 1994.(invited)

- [45] Khenouf H., Canudas-de-Wit, C. (1995) "On the construction of stabilizing discontinuous controllers for nonholonomic systems", IFAC-NOLCOS'95, Tahoe City, Cal. June 1995.
- [46] Williamson D., Canudas-de-Wit, C. (1995) "Performance-Oriented Robust Control for a Class of Nonlinear Systems", ECC'95, Rome, Italy, Sept. 1995.
- [47] Khenouf H., Canudas-de-Wit, C., and Van Der Schaft, A.J. (1995) "Preliminary results on asymptotic stabilization of Hamiltonian systems with nonholonomic constraints", 34th IEEE Conference on Decision and Control, New-Orleans, USA Dec 1995.
- [48] Canudas-de-Wit, C. and Khenouf H., (1995) "Quasi-continuous stabilizing controllers for non-holonomic systems : design and robustness considerations", ECC'95, Rome, Italy, Sept. 1995. (invited)
- [49] Ndoudi-Likoho and C. Canudas-de-Wit,(1995) "Dynamic nonlinear control for a platoon of cars" , IFAC Workshop on Advances in Automotive Control, Ascona (Suisse), Mars 1995.
- [50] Khenouf, H. and Canudas-de-Wit, C. (1996) "Quasi-Continuous Exponential Stabilizers for nonholonomic systems", 13th IFAC, Word Congress, San Francisco, USA, Jun 1996.
- [51] Canudas de Wit, C. and P. Lischinsky (1996) "Adaptive Friction compensation with Dynamic Model", 13th IFAC, Word Congress, San Francisco, USA, Jun 1996.
- [52] Lischinsky P, Canudas de Wit, C., and Morel G. (1996) "Friction compensation of a schilling hydraulic robot", IEEE'97 Conference on Control applications, Hartford, Connecticut (USA), 5-7 Oct.
- [53] L. Villani, C. Canudas-de-Wit, C. and B. Blogliato (1996) "An Exponentially Stable Adaptive Force/position Control for Robot Manipulator", 13th IFAC, Word Congress, San Francisco, USA, Jun 1996.(invited)
- [54] Ramirez, J. and C. Canudas-de-Wit (1996) "Optimal torque control for current-fed Induction motors : Experimental evaluation", Electrimacs/96, Saint-Nazaire France, 18 Sept. 1996.(invited)
- [55] L. Villani, B. Siciliano, C. Canudas-de-Wit, C. and B. Blogliato (1996) "Force/position control of a robot Manipulator in contact with a compliant environment", Proceedings of the Research Workshop of ERNET-European robotics Network, Darmstadt, Set. 9-10. Allemagne 1996. World Scientific.(invited)
- [56] G. Ferretti, C. Canudas-de-Wit, C. and B. Blogliato (1996) "Simultaneous Force Stabilization for Rigid and Flexible Mechanisms under compliant contacts", Proceedings of the Research Workshop of ERNET-European robotics Network, Darmstadt, Set. 9-10. Allemagne 1996. World Scientific.
- [57] L. Villani, Canudas de Wit, C. and B. Brogliato (1996) "An Exponentially Stable Adaptive Force/Position Control for Robot Manipulators", 13th IFAC, Word Congress, San Francisco, USA, Jun 1996.
- [58] Canudas-de-Wit, C. and J. Ramirez (1996) "Optimal torque control for current-fed Induction motors", Proceedings of the American Control Conference, June 1997.
- [59] Fragopoulos D. and C. Canudas-de-Wit (1996) "Combination of invariant sets as a tool for stabilization", Conference on Decision and Control, San Diego, Dec. 1997.

- [60] Ndoudi-likoho, A.D. and Canudas-de-Wit (1996) "Nonlinear Control of Multi-body Wheeled vehicles", Conference on Decision and Control, San Diego, Dec. 1997 (invited).
- [61] G. Shuzhi and C. Canudas-de-Wit (1996) "Adaptive friction compensation with generalized velocity/position dependency", Conference on Decision and Control, San Diego, Dec. 1997.
- [62] D. Georges, C. Canudas-de-Wit and J. Ramirez (1996) "Nonlinear  $H_2$  and  $H_\infty$  Optimal controllers for current-fed induction motors", European Control Conference, Louven-la-Neuve, 1997 (invited).
- [63] C. Canudas-de-Wit L. Roussel and A. Goswami (1996) "Periodic Stabilization of a 1-DOF Hopping Robot under Nonlinear Compliant Surface", IFAC-SYROCO'97, Nantes 1997.
- [64] C. Canudas de Wit and R. Kelly (1996) "Passivity-based control design for robots with dynamic friction", IASTED- Robotics and Manufacturing, Cancun, May 1997.
- [65] M. Perrier, C. Canudas-de-Wit (1997),. "Commande robuste en robotique sous-marine :étude comparative. Application au contrôle d'un système couple ROV/ Manipulateur", Séminaire MACSIM "Control de processus", Toulon, 20 Juin 1997 (invited).
- [66] Canudas-de-Wit, C., Lischinsky P, (1996) "Adaptive friction compensation with partially known dynamic friction model", IFAC Worl congress, San Fransisco, 1996.
- [67] A. Pervozvanski, and Canudas-de-Wit, C. (1997) "Vibrational Smoothing in Systems with Dynamic Friction", IFAC workshop NOLCOS'98, Twente, June 1998.
- [68] Canudas-de-Wit, C. , and L. Praly (1998) "Adaptive eccentricity compensation", Submitted to CDC'98, Orlando, USA, Dec. 1998.
- [69] C. Canudas-de-Wit, E. Olguin Diaz and M. Perrier, (1998),. "Control of Underwater Vehicle/manipulator with composite dynamics", American Control Conferences, Philadelphia (USA), 24-26 juin 1998. June 1998.
- [70] C. Canudas-de-Wit, E. Olguin Diaz and M. Perrier, (1998), "Nonlinear control of Underwater Vehicle/manipulator with composite dynamics", IEEE Robotics and Automation conference, Louven (Belgique) 21 May 1997.
- [71] E. Olguin Diaz, C. Canudas-de-Wit and M. Perrier, (1998),. "A comparative study of neglected dynamics on an Underwater Vehicle/Manipulator system under nonlinear robust control", Proceedings of OCEANS'98 IEEE Conferece and Exhibition. Nice, France, 1998.
- [72] Roussel L., Canudas-de-Wit C., Goswami "A. Generation Of Energy Optimal Complete Gait Cycle For Biped Robots". ICRA'98, Bruxelles, Louvain-la-Neuve (Belgique).
- [73] Astrom K.J., Canudas-de-Wit C., Sorine M. "Control Of Systems With Dynamic Friction." Workshop on Systems with Friction, Tampa, Floride (USA), 14 décembre 1998.
- [74] Canudas-de-Wit C. "Control Design For Ultrasonic Motors With Dynamic Friction Interface." IFAC'99 World Congress, Beijing (Chine), juin 1999 (invited).
- [75] Canudas-de-Wit "C. Control Of Friction-Driven Systems". ECC'99, European Control Conference, Karlsruhe (Allemagne), 31 août - 3 Septembre 1999(invited).

- [76] Claeys X., Canudas-de-Wit C., Bechart H. “Modeling And Control Of The Steering Actuator For Heavy Duty Vehicules.” ECC’99, European Control Conference, Karlsruhe (Allemagne), 31 août – 3 septembre 1999.
- [77] Canudas-de-Wit C., Claeys X., Bechart H. “Stability Analysis Via Passivity Of The Lateral Actuator Dynamics Of A Heavy Vehicule.” IEEE International Symposium on Computer-Aided Control Systems Design, Hawaii (USA), 22-26 août 1999. (Conference invité)
- [78] Canudas-de-Wit C., Tsiotras P. “Dynamic Tire Friction Models for Vehicle Control.” Conference on Decision and Control (CDC ’99), Phoenix (Arizona, USA), décembre 1999.
- [79] Canudas-de-Wit C. “Control of Systems with Friction”. IEEE Conference on Control Applications, CCA’99, Hawaii (USA), 22-27 août 1999 (invited).
- [80] Canudas-de-Wit C., Horowitz R. “Observers For Tire/Road Contact Friction Using Only Wheel Angular Velocity Information.” Conference on Decision and Control, CDC ’99, Phoenix (Arizona, USA), décembre 1999.
- [81] Canudas-de-Wit C., Brogliato B. “Stability Issues For Vehicle Platooning In Automated Highway Systems.” IEEE Conference on Control Applications, CCA’99, Hawaii (USA), 22-27 août 1999 (invited).
- [82] Tsiotras P., Canudas-de-Wit C. “On The Optimal Braking For Wheeled Vehicles.” American Control Conference (ACC’2000), Chicago, Illinois (USA), 28-30 juin 2000.
- [83] Claeys X., Canudas-de-Wit C., Bechart H. “Lateral Control Of Heavy Duty Vehicles In A Convoy.” IFAC Conference on Mechatronics Systems, Darmstadt (Allemagne), 18-20 septembre 2000, pp. 127-133 (invited).
- [84] Claeys X., Canudas-de-Wit C., Bechart H. “Commande Laterale Des Poids Lourds En Convoi.” Conférence Internationale Francophone d’Automatique, CIFA 2000, Lille, France (invited).
- [85] Canudas-de-Wit C. “Linear Space-Invariant Control As An Alternative to Discontinuous Switching Controllers.” Proceedings of the 6th IEEE International Workshop on Variable Structure Systems : ” Advances in Variable Structure Systems : Analysis, Integration and Applications ”, pp. 135-146, World Scientific, Xianghuo Yu and Jian-Xin Xu (Editors), Gold Coast, Queensland (Australie), 7-9 décembre 2000.
- [86] Canudas-de-Wit C., Youssef A., Barbot J.P., Martin P., Malrait F. “Observability Conditions Of Induction Motors At Low Frequencies.” Conference on Decision and Control, Sydney (Australie), décembre 2000.
- [87] Jingang Y., Alvarez L., Horowitz R., Canudas-de-Wit C. “Adaptive Emergency Braking Control Using A Dynamic Tire/Road Friction Model.” 39th IEEE Control on Decision Conference, Sydney (Australie), décembre 2000.
- [88] Canudas-de-Wit C., Billot P. “Human Friendly Control : Application To Steering Drive-By Wire Systems”. IFAC Workshop on Advances in Automotive Control, Kalsruhe (Allemagne), 28-30 mars 2001 (invited).

- [89] Claeys X., Yi J., Alvarez L., Horowitz R., Canudas-de-Wit C., Richard A. "A New 3D Dynamic Tire/Road Friction Model For Vehicle Simulation And Control." ASME-IMECE DSC, Nov. 20001.
- [90] Claeys X., Yi J., Alvarez L., Horowitz R., Canudas-de-Wit C., Richard A. "Tire Friction Modeling Under Wet Road Conditions." American Control Conférence, Juin 2001.
- [91] Canudas-de-Wit C., Guegan S., Richard A. "Control Design For An Electro-Power Steering System : Part I The Reference Model." ECC'2001, European Control Conference, Porto (Portugal), septembre 2001 (invited).
- [92] Canudas-de-Wit C., Guegan S., Richard A. "Control Design For An Electro-Power Steering System : Part II The Control Design." ECC'2001, European Control Conference, Porto (Portugal), septembre 2001 (invited).
- [93] Canudas-de-Wit C., Kolmanovsky I., Sun J. "Adaptive Pulse Control Of Electronic Throttle". American Control Conference, ACC'01, Washington, (D.C., USA), 25-27 juin 2001.
- [94] Favela, A., I. Perez, and C. Canudas-de-Wit, (2002) "Further results on the identification of an Electronic-throttle", 10th Mediterranean Conference On Control And Automation, Lisbon, Portugal, July 9-12, 2002.
- [95] Canudas-de-Wit C., Youssef A., Nguyen-Phuoc V.T. "Almost Globally Stable Nonlinear Speed Observer For A Permanent Magnet Synchronous Motor", 40th IEEE Conference on Decision and Control (CDC), Las Vegas, Nevada, USA, 10-13 december 2002.
- [96] Grogard F., Canudas-De-Wit C. "Design of Orbitally Stable Zero Dynamics for a Class of Nonlinear Systems". 40th IEEE Conference on Decision and Control (CDC), Las Vegas, Nevada, USA, 10-13 december, 2002.
- [97] Vivas, C., Rubio F.R., Canudas-de-Wit C. "Gain-Scheduling Control Of Systems With Dynamic Friction" 40th IEEE Conference on Decision and Control (CDC), Las Vegas, Nevada, USA, 2002, 10-13 december.
- [98] Canudas-de-Wit C., Espiau B., Urrea C. "Orbital Stabilization Of Underactuated Mechanical Systems". 15th World Congress IFAC, Barcelona (Spain), 2002, 21-26 July (invited).
- [99] Canudas-De-Wit C., Perruquetti W. "Smoothing Strategies For High-Gain Control". IFAC Latin American Control Conference, Guadalajara (Mexique), 2002, decembre.
- [100] Canudas-De-Wit "Advances in Walking robot Control". IFAC Latin American Control Conference, Guadalajara (Mexique), 2002, decembre (conference plénière).
- [101] Urrea C., Canudas De Wit C., Mahla I. Orbital Stabilization Of An Underactuated Three-Link Planar Robot, "International Symposium on Advanced Robot Systems and Virtual Reality", Bourges (France), 2002, Juin.
- [102] Velenis E., Tsiotras P., Canudas-De-Wit C. "Extension Of The Luge Dynamic Tire Friction Model To 2D Motion IEEE Control Mediterranean conference", Lisboa, June 2002 (invited).

- [103] Perram J., Shiriaev A., Canudas-de-Wit C., Grognard F. “Explicit Formula for A General Integral Of Motion For A Class Of Mechanical Systems Subject To Holonomic Constraint”. IFAC workshop on Hamiltonian Systems, Sevilla, April, 2003.
- [104] Wiltrant, E, C. Canudas-de-Wit, and D. Georges, “Output stabilization via two-channel transmission communication” . IFAC workshop on Time-Delay system, Rocquencourt, Sept 8-13, France 2003.
- [105] Canudas-de-Wit C., M. L. Petersen M.L., and Shiriaev A. “A New Nonlinear Observer For Tire/Road Distributed Contact Friction”. IEEE Control and Decision Conference, Mahui, USA, Dec. 2003.
- [106] Canudas-de-Wit C. “Virtual constraints : a tool for walking robot control and balancing”. IFAC workshop SYROCO’03, Wroclaw, Poland, Sept.1-3 2003 (Plenary conference).
- [107] E. Westervelt, J.W. Grizzle, and C. Canudas-de Wit. “Switching and PI control of walking motions of planar biped walkers.” IEEE Control and Decision Conference, Mahui, USA, Dec. 2003.
- [108] Martinez, J.-J., Avila Vilchis J.C., Canudas-de-Wit C. (2004) “A New Bicycle Model With 3D Dynamic Tire/Road Friction Forces”. IFAC Symposium on Advanced Vehicle control, Salerno, Italy, April, 2004.
- [109] Martinez, J.-J. and Canudas-de-Wit C.(2004) “Model reference control approach for safe longitudinal control”. American Control Conference, Boston, USA June 2004.
- [110] Canudas-de-Wit C. and R. Kelly (2004) “Robot control using the extended passive LuGre friction model”. IFAC Latinoamerican Control Conference, La Habana, Cuba, May, 2004
- [111] Canudas-de-Wit C. (2004) “On orbital stabilization of under-actuated mechanical systems”. Workshop on Applications of advanced Control Theory to Robotics and Automation Villa Mondragone, Monteporzio Catone, Roma, Italy June 3-4, 2004 (invited).
- [112] O.-R. Natale, O. Sename, and C. Canudas-de-Wit (2004), ”Inverted Pendulum Stabilization through the Ethernet Network, Performance Analysis”, American Control Conference, Boston, USA, June 2004.
- [113] Martinez Molina J.J. and Canudas De Wit C.(2004) “Model reference control approach for safe longitudinal control” IEEE American Control Conference, IEEE Boston, USA, June 2004.
- [114] Wiltrant, E, C. Canudas-de-Wit, D. Georges, and M. Alamir(2004) “Remote stabilization via time-varying communication network delays” . IEEE Control application Conference, Tapei, Taiwan, Sept. 2004 (invited).
- [115] Attia, S.A., Canudas de Wit c., Alamir (2004), “A lyapunov-based hybrid control strategy for voltage collapse avoidance in a power system”, World Automation Congress, Sevilla Spain, June 2004 (invited).
- [116] Shiriaev A. and Canudas-de-Wit C. (2004) “Virtual constraints a constructive tool for orbital stabilization of underactuated nonlinear systems : part I Theory”. IFAC NOLCOS’04 (Germany).

- [117] Shiriaev A. and Canudas-de-Wit C.(2004) “Virtual constraints a constructive tool for orbital stabilization of underactuated nonlinear systems : part II Study cases of pendular systems”. IFAC- NOLCOS’04 (Germany).
- [118] Shiriaev A., Anders Sandberg, and Canudas-de-Wit C.(2004) “Motion Planning and Feedback Stabilization of Periodic Orbits for an Acrobot”. 43rd IEEE Conference on Decision and Control, CDC 04, 14-17 december 2004, Atlantis, Paradis Island, Bahamas.
- [119] Pan Y.J., Canudas-de-Wit C., Sename O. (2004)“Predictive controller design for bilateral teleoperation systems with time varying delays”, 43rd IEEE Conference on Decision and Control, CDC 04, 14-17 december 2004, Atlantis, Paradis Island, Bahamas.
- [120] Attia S.A., Alamir M., Canudas-de-Wit C. (2005), “Sub optimal control of switched nonlinear systems under location and switching constraints”. 16th IFAC World Congress, Prague, 4-8 july 2005, Prague, Czech republic.
- [121] Jacquet, D. , Canudas-de-Wit C. and Koenig (2005), “Optimal ramp metering strategy with extended LWR model ; analysis and computational methods”. 16th IFAC World Congress, Prague, 4-8 July 2005, Prague, Czech republic.
- [122] Dolcini P., C. Canudas-de-Wit, and H. Béchart, “Improved optimal control of dry clutch engagement,” 16th IFAC World Congress, Prague, 4-8 July 2005, Prague, Czech republic.
- [123] Martinez J.-J. Carlos Canudas-de-Wit, “ A Collision Warning System based on an Inter-distance Reference Model”, 16th IFAC World Congress, Prague, 4-8 July 2005, Prague, Czech republic.
- [124] A. Viguria, R. Cano, M. Fiacchini, A. Prieto, B. J. Vela, F. R. Rubio, J. Aracil y C. Canudas-de-Wit, “PPCar (Personal Pendulum Car) : Vehículo basado en péndulo invertido”, Jornadas de Automatica de Alicante, Obtention du prix ”Innovación y desarrollo en los sistemas de automatización” .
- [125] Jacquet, D. Canudas-de-Wit C. and Koenig, D. (2005) “Freeway traffic control and monitoring with disturbed macroscopic models”, 44rd IEEE Conference on Decision and Control, Dec. 2005, Sevilla, Spain.
- [126] Dolcini, P., Bechart, H. and Canudas-de-Wit C. (2005) “Observed-based optimal control of dry clutch engagement” ,44rd IEEE Conference on Decision and Control, Dec. 2005, Sevilla, Spain.
- [127] Canudas-de-Wit C., M. Cocherro, F. Rubio and E. Navarro (2005) “D-OSKIL : a new mechanism for suppressing stick-slip in Oil well drillstrings”, 44rd IEEE Conference on Decision and Control, Dec. 2005, Sevilla, Spain.
- [128] Canudas-de-Wit C., J. Aracil, F. Gordillo and F. Salas (2005) “The oscillation killer : a mechanism to eliminate undesired limit cycles in nonlinear systems”, 44rd IEEE Conference on Decision and Control, Dec. 2005, Sevilla, Spain.
- [129] C. Canudas-de-Wit (2005) “Fun-to-drive by feedback”. Plenary session on the IEEE Conference on Decision and Control, Dec. 2005, Sevilla, Spain.
- [130] Coudon, J., Claeys, X. and Canudas-de-Wit C. (2006) “A new global reference model for steer-by-wire control with embedded vehicle dynamics”, IEEE American Control Conference , June. 2006, USA.

- [131] Carlos Canudas-de-Wit, F. Rodriguez Rubio, J. Fornes Rumbao, and F. Gomez-Estern Aguilar (2006) "Differential Coding in Networked Controlled Linear Systems", IEEE American Control Conference, ACC'06, June, Minneapolis, USA. (invited session).
- [132] D. Jacquet, Krstic, Miroslav, and Carlos Canudas-de-Wit, (2006) "Optimal Control of Scalar One-Dimensional Conservation Laws", IEEE American Control Conference, ACC'06, June. 2005, Minneapolis, USA. (invited session).
- [133] E. Witrant, D. Georges, and C. Canudas-de-Wit, (2006) "Optimal control design for the stabilization of network controlled systems," American Control Conference, June 2006, ACC'06
- [134] D. Jacquet, J. Jaglin, D. Koenig and C. Canudas-de-Wit (2006) "Non-Local Feedback Ramp Metering Controller Design", Proceedings of the 11th IFAC Symposium on Control in Transportation Systems (CTS), Delft, The Netherlands, 2006.
- [135] D. Jacquet, M. Krstic and C. Canudas-de-Wit, (2006) "Optimal Control of Scalar One-Dimensional Conservation Laws", Proceedings of the 2006, American Control Conference, Minneapolis, U.S.A., 2006.
- [136] D. Jacquet, C. Canudas-de-Wit, and D. Koenig, "Optimal Control of Systems of Conservation Laws and Application to Non-Equilibrium Traffic Control", Proceedings of the 13th IFAC Workshop on Control Applications of Optimisation, Cachan, France, 2006.
- [137] Denis Jacquet, M. Krstic, and Carlos Canudas De Wit. Optimal control of scalar one-dimensional conservation laws. In *American Control Conference, IEEE ACC'06*, 14-16 June 2006, Minneapolis (Minnesota) Etats Unis d'Amerique, pages –, Minneapolis, États-Unis, 2006.
- [138] Dolcini, P., Bechart, H. and Canudas-de-Wit C. (2006), "Lurch Avoidance Strategy And Its Implementation In AMT Vehicles", MECHATRONICS 2006 - 4th IFAC-Symposium on Mechatronic Systems Heidelberg, Germany, September 12th-14th, 2006.(Invited sessions). *Best student paper award*.
- [139] M. Cochero, C. Canudas-de-Wit, C. and F. Rubio(2006), "Stability of the D-OSKIL Oscillation Suppression Mechanism for Oil Well Drillstrings", 45rd IEEE Conference on Decision and Control, Dec. 2006.
- [140] F. Gomez-Estern Aguilar, Carlos Canudas-de-Wit, F. Rodriguez Rubio, and J. Fornes Rumbao (2006) "Adaptive Delta-modulation Coding for Networked Controlled Systems". 45rd IEEE Conference on Decision and Control, Dec. 2006.
- [141] M. Fiacchini, A. Viguria, R. Cano, A. Prieto, F.R. Rubio, J. Aracil y C. Canudas-de-Wit. *Design and Experimentation of a Personal Pendulum Vehicle*. 7th Portuguese Conference on Automatic Control (CONTROLO'06), 11-13, September, Lisboa, Portugal, 2006.
- [142] Emmanuel Witrant, Didier Georges, and Carlos Canudas De Wit (2006). Du Canal de Communication à la Problématique des Systèmes Commandés par Réseaux. In *IEEE Conférence Internationale Francophone d'Automatique, CIFA 2006*, page 6 p., France, December 2006.
- [143] Carlos Canudas De Wit, Jonathan Jaglin, and Cyrille Siclet. Energy-aware 3-level coding and control co-design for sensor network systems. In *16th IEEE International Conference on Control Applications, CCA*, pages <http://www-lag.ensieg.inpg.fr/canudas/>, Singapour, 2007.



- [144] Ivan Lopez, C. T. Abdalla, and Carlos Canudas De Wit.(2007) Gain-Scheduling Multi-Bit Delta-Modulator for Networked Controlled System. In *European Control Conference, ECC'07*, page s/n, Kos, Greece, July 2007.
- [145] Carlos Canudas De Wit, Kelit Crisanto Vega, and Jonathan Jaglin (2007). Non uniform sampling coding in networked controlled linear systems. In *European Control Conference, ECC'07*, 2-5 July 2007, Kos, Greece, page 6, Kos, Greece, July 2007. ECC.
- [146] Fabio Gomez Estern, Carlos Canudas De Wit, Francisco Rubio, and Jose Fornes (2007). Adaptive delta-modulation coding for networked controlled systems. In *American Control Conference, IEEE ACC'07*, 11-13 July 2007, New York City, USA, page 7, New York City, États-Unis, 2007. IEEE.
- [147] Carolina Albea-Sanchez, Carlos Canudas De Wit, and Francisco Gordillo Alvarez (2007). Adaptive Control of the Boost DC-AC Converter. In *IEEE 22nd International Symposium on Intelligent Control, ISIC 2007*, Singapour, Singapour, 2007.
- [148] Carolina Albea-Sanchez, Francisco Gordillo Alvarez, and Carlos Canudas De Wit. Control Adaptativo del Inversor Boost. In *XXVIII Jornadas de Automática*, pages 1000–1006, Espagne, September 2007.
- [149] Jonathan Jaglin, Carlos Canudas De Wit, and Cyrille Siclet. Delta Modulation for Multivariable Centralized Linear Networked Controlled Systems. In *47th IEEE Conference on Decision and Control, CDC 2008*, page 8, Cancun, Mexique, 2008.
- [150] Jose Cueli and Carlos Canudas De Wit (2008). Passivity of Interconnected Asynchronous Discrete-Time Systems. In *17th IFAC World Congress*, page s/n, Séoul, Corée, République Populaire Démocratique De, July 2008.
- [151] Carolina Albea-Sanchez, Francisco Gordillo Alvarez, and Carlos Canudas De Wit. Adaptive Control of the Boost Inverter with Load RL. In *17th IFAC World Congress*, pages 3316–3321, Seoul, Corée, République De, July 2008.
- [152] Carolina Albea-Sanchez, Carlos Canudas De Wit, and Francisco Gordillo Alvarez. Advanced Control Design for Voltage Scaling Converters. In *34th Annual Conference of the IEEE Industrial Electronics Society (IECON'08)*, pages 79–84, Orlando, États-Unis, November 2008.
- [153] H. Zakaria, L. Fesquet, S. Durand, C. Albea-Sanchez, Y. Thonnard, C. Canudas De Wit, and N. Marchand. Integrated Asynchronous Regulation for Nanometric Technologies : Application to an Embedded Parallel System. In *MINATEC CROSSROADS'08*, Grenoble, France, June 2008.
- [154] Manuel Lopez-Martinez, Carlos Canudas De Wit, and Francisco Rubio. Stability of Asynchronous Feedback-Interconnected Dissipative Systems. In *European Control Conference*, budapest, Hongrie, August 2009.
- [155] Lara Briñon Arranz, Alexandre Seuret, and Carlos Canudas De Wit (2009). Translation Control of a Fleet Circular Formation of AUVs under Finite Communication Range. In *48th IEEE Conference on Decision and Control, CDC 2009*, page 6, Shanghai, Chine, December 2009.

- [156] Brandon Moore and Carlos Canudas De Wit (2009). Formation Control via Distributed Optimization of Alignment Error. In *48th IEEE Conference on Decision and Control, CDC 2009*, page unknown, Shanghai, Chine, December 2009.
- [157] Carolina Albea-Sanchez, Carlos Canudas De Wit, and Francisco Gordillo Alvarez. Control and Stability Analysis for the Vdd-hopping Mechanism. In *IEEE MSC, Conference on Control and Applications*, Saint-Petersburg, Russie, Fédération De, July 2009.
- [158] Riccardo Ceccarelli, Carlos Canudas De Wit, Philippe Moulin, and A. Sciarretta (2009). Model-based Adaptive Observers for Intake Leakage Detection in Diesel Engines. In *American Control Conference, IEEE ACC'09*, page s/n, Saint Luis, Missouri, États-Unis, June 2009.
- [159] Riccardo Ceccarelli, Philippe Moulin, and Carlos Canudas De Wit (2009). Robust Strategy for Intake Leakage Detection in Diesel Engines. In IEEE, editor, *IEEE Conference on Control applications, CCA*, page s/n, Saint Petersburg, Russie, Fédération De, July 2009.
- [160] Haochuan Lu, Jonathan Dumon, and Carlos Canudas De Wit. Experimental study of the D-OSKIL mechanism for controlling the stick-slip oscillations in a drilling laboratory testbed. In *2009 IEEE Multi-conference on Systems and Control*, pages –, Saint Petersburg, Russie, Fédération De, 2009.
- [161] Rafael Barreto Jijon, Carlos Canudas De Wit, Silviu-Iulian Niculescu, and Jonathan Dumon. Adaptive Observer Design under Low Data Rate Transmission with Applications to Oil Well Drill-string. In *2010 American Control Conference - ACC2010*, pages 1973–1978, Baltimore, Maryland, USA, 2010.
- [162] Nicolas Cardoso De Castro, Carlos Canudas De Wit, and Karl Henrik Johansson. On Energy-Aware Communication and Control Co-design in Wireless Networked Control Systems. In *2nd IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys'10)*, pages 49–54, Annecy, France, September 2010.
- [163] Lara Briñon Arranz, Alexandre Seuret, and Carlos Canudas De Wit (2010). Contraction Control of a Fleet Circular Formation of AUVs under Finite Communication Range. In *2010 American Control Conference - ACC2010*, page 6, Baltimore, Maryland, États-Unis, June 2010.
- [164] Lara Briñon Arranz, Alexandre Seuret, and Carlos Canudas De Wit (2010). General Framework using Affine Transformations to Formation Control Design. In *2nd IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys'10)*, page 6, Annecy, France, September 2010.
- [165] Brandon Moore and Carlos Canudas De Wit (2010). Source Seeking via Collaborative Measurements by a Circular Formation of Agents. In *2010 American Control Conference - ACC2010*, page s/n, Baltimore, Maryland, États-Unis, July 2010.
- [166] Riccardo Ceccarelli, Philippe Moulin, and Carlos Canudas De Wit. Turbine Efficiency Estimation for Fault Detection Application. In *SAE 2010 World Congress & Exhibition*, volume <http://papers.sae.org/2010-01-0568/>, page s/n, Detroit, États-Unis, April 2010. SAE International.

- [167] Jiang Wenjuan, Carlos Canudas De Wit, Olivier Sename, and Jonathan Dumon. A new mathematical model for car drivers with spatial preview. In *18th IFAC World Congress (IFAC WC 2011)*, page S/N, Milano, Italie, August 2011.
- [168] Alireza Farhadi and Carlos Canudas De Wit (2011). An Integration Framework For Control/Communication/Computation (3C) Co-design With Application In Fleet Control Of AUVs. In *50th IEEE Conference on Decision and Control and European Control Conference (IEEE CDC-ECC 2011)*, page s/n, Orlando, Floride, États-Unis, December 2011.
- [169] Lara Briñon Arranz, Alexandre Seuret, and Carlos Canudas De Wit (2011). Collaborative Estimation of Gradient Direction by a Formation of AUVs. In *5th International ICST Conference on Performance Evaluation Methodologies and Tools (VALUETOOLS 2011)*, page 8, Cachan, France, May 2011.
- [170] Lara Briñon Arranz, Alexandre Seuret, and Carlos Canudas De Wit (2011). Collaborative Estimation of Gradient Direction by a Formation of AUVs under Communication Constraints. In *50th IEEE Conference on Decision and Control and European Control Conference (IEEE CDC-ECC 2011)*, page 6, Orlando, Floride, États-Unis, December 2011.
- [171] Lara Briñon Arranz, Alexandre Seuret, and Carlos Canudas De Wit. Elastic Formation Control Based on Affine Transformations. In *2011 American Control Conference - ACC 2011*, page 6, San Francisco, Californie, États-Unis, July 2011.
- [172] Carlos Canudas De Wit (2012). Best-effort Highway Traffic Congestion Control via Variable Speed Limits. In *50th IEEE Conference on Decision and Control and European Control Conference (IEEE CDC-ECC 2011)*, page s/n, Orlando, Floride, États-Unis, December 2011.
- [173] Irinel Constantin Morarescu and Carlos Canudas De Wit (2011). Highway traffic model-based density estimation. In *2011 American Control Conference - ACC 2011*, page S/N, San Francisco, Californie, États-Unis, July 2011.
- [174] Javier Tordesillas, Valentina Ciarla, and Carlos Canudas De Wit. Oscillation annealing and driver/tire load torque estimation in Electric Power Steering Systems. In *2011 IEEE Multi-Conference on Systems and Control (MSC 2011)*, page s/n, Denver, Colorado, États-Unis, September 2011.
- [175] Nicolas Cardoso De Castro, Carlos Canudas De Wit, and Federica Garin (2012) Energy-aware wireless networked control using radio-mode management. In *2012 American Control Conference (ACC 2012)*, Montréal, Canada, March 2012.
- [176] Nicolas Cardoso De Castro, Daniel E. Quevedo, Federica Garin, and Carlos Canudas De Wit (2012). Smart Energy-Aware Sensors for Event-Based Control ( IEEE CDC'12). In *51th IEEE Conference on Decision and Control (CDC 2012)*, Maui, Hawaii, USA, Dec 2012.
- [177] Carlos Canudas De Wit, Federica Garin, Ruggero Fabbiano, Pierre Rouchon, and Antoine Rousseau (2012). Source localization using Poisson integrals. In *NecSys - 3rd IFAC workshop on distributed estimation and control in networked systems - 2012*, Santa Barbara, États-Unis, July 2012.

- [178] Dominik Pisarski and Carlos Canudas De Wit (2012). Analysis and Design of Equilibrium Points for the Cell-Transmission Traffic Model. In *2012 American Control Conference (ACC 2012)*, Montreal, Canada, April 2012.
- [179] Dominik Pisarski and Carlos Canudas De Wit (2012) Optimal Balancing of Road Traffic Density Distributions for the Cell Transmission Model. *51th IEEE Conference on Decision and Control (CDC 2012)*, Maui, Hawaii, United States, Dec. 2012.
- [180] Carlos Canudas De Wit and Leon Ojeda, L.and Kinbangou Y. (2012). Graph constrained-CTM observer design for the Grenoble south ring. In *13-th IFAC Symposium on Control in Transportation Systems*, Sofia, Bulgaria, September, 2012.
- [181] Valentina Ciarla, Violaine Cahouet, Carlos Canudas De Wit, and Franck Quaine (2012). Additional material for the paper : "Genesis of booster curves in Electric Power Assistance Steering Systems", ITSC2012. In *15th IEEE Intelligent Transportation Systems Conference 2012 (ITSC 2012)*, page 2, Anchorage, Alaska, États-Unis, September 2012.
- [182] Leon Ojeda, Luis and Canudas-de-Wit, Carlos and Kibangou, Alain Y. (2013), Adaptive Kalman Filtering for Multi-Step ahead Traffic Flow Prediction. *American Control Conference (ACC 2013)*, Washington, United States, June 2013.
- [183] Leon Ojeda, Luis and Canudas-de-Wit, Carlos and Kibangou, Alain Y. (2013), Online Dynamic Travel Time Prediction using Speed and Flow Measurements. *12th European Control Conference (ECC 2013)*, Invited session. Zurich, Switzerland, July 2013.
- [184] Giovanni De Nunzio, Carlos Canudas-de-Wit, Philippe Moulin, Domenico Di Domenico (2013). Eco-Driving in Urban Traffic Networks using Traffic Signal Information. *52nd IEEE Conference on Decision and Control (CDC 2013)*. Firenze, Italy, December 2013.
- [185] Dominik Pisarski and Carlos Canudas-de-Wit (2013) Optimal Balancing of Traffic Density : Application to the Grenoble South Ring. *12th European Control Conference (ECC 2013)*, Invited session. Zurich, Switzerland, July 2013.
- [186] Fabio Morbidi, Luis Leon Ojeda, Carlos Canudas-de-Wit, Iker Bellicot (2014). A New Robust Approach for Highway Traffic Density Estimation In : *Proceedings of the 13th European Control Conference ECC14*, June 2014, Strasbourg, France.
- [187] Giovanni De Nunzio, Carlos Canudas-de-Wit, Philippe Moulin (2014). Urban Traffic Eco-driving : A Macroscopic Steady-State Analysis. In : *Proceedings of the 13th European Control Conference ECC14*, June 2014, Strasbourg, France.
- [188] Ruggero Fabbiano, Carlos Canudas-de-Wit, Federica Garin (2014) Distributed Source Localisation with no Position Information. In : *Proceedings of the 13th European Control Conference ECC14*, June 2014, Strasbourg, France.
- [189] Giovanni De Nunzio, Carlos Canudas-de-Wit and Philippe Moulin (2014) Urban Traffic Eco-Driving : Speed Advisory Tracking To appear at : *the 53rd IEEE Conference on Decision and Control*, Dec. 2014, Los Angeles, USA.

## Brevets

- [1] Canudas-de-Wit C., Ramirez J., Georges D. “Minimum energy regulation system for an asynchronous motor by field oriented control .” Publication info :US6239574 (B1)2001-05-29 ; Priority date :1998-05-20 (Transfère à Schneider Electric Ind SA [US]).
- [2] Nguyen-Phuoc V.T. , Youssef A. , Canudas-de-Wit C. “Limitation instantanée du courant dans les variateurs de vitesse des machines électriques”. Publication info : FR2818826 (A1) 2002-06-28. Priority date : 2000-12-27. Others numbers : EP1229637 ; US2002093308-A1 ; JP2002238292-A ; US6680599-B2. Cadre contractuelle avec Schneider Electric Ind SA [FR]
- [3] Bechart H., Claeys X., Canudas-de-Wit C. “Système de pilotage de l’actionneur de Direction d’un véhicule automobile”. N/Ref 015172. Publication info : FR2795377 (A1) 2000-12-29. Priority date : 1999-06-24 Cadre contractuelle avec : RENAULT VEHICULES IND [FR].
- [4] Xavier Claeys, Guillaume Torres, and Carlos Canudas De Wit. Système de direction assistée de véhicule avec restitution d’efforts (Power steering system for vehicle, has steering angle assisting actuator and force restoring actuator that are controlled by torque and wireless operation rules executing modules ), Publication info :FR2873343 (A1) 2006-01-27 . Priority date :2004-07-22. Applicant :RENAULT SAS [FR].
- [5] Hubert Bechart, Carlos Canudas De Wit, Pietro Dolcini, and Beatrice Gondre. Procédé d’aide à la synchronisation d’un embrayage, Publication info : FR2900999 (A1)2007-11-16. Priority date :2006-05-12. Applicant :RENAULT SAS [FR]
- [6] Hubert Bechart, Carlos Canudas De Wit, and Pietro Dolcini Method For Controlling The Engine Torque Of An Automotive Vehicle While Changing Gears, Publication info : WO2008078019 (A1) 2008-07-03. Priority date :2006-12-22. Applicant :RENAULT SAS [FR]
- [7] Carlos Canudas De Wit, Xavier Claeys, Pothin Richard and Julien Coudon. Fly-wheel parasitic torque compensating device for vehicle, has calculating unit providing compensation torque signal based on input signals of castor angle and external efforts of front axle to compensate effect of torque in fly wheel., Publication info :FR2898570 (A1)2007-09-21. Priority date : 2006-03-16. Applicant : RENAULT SAS [FR]
- [8] Carlos Canudas De Wit, Xavier Claeys, and Julien Coudon. Vehicle wheel castor angle controlling device, has steering system modeled based on buckle system, and wheels whose castor angle varies at given speed, with respect to reduction ratio of steering of vehicle for given constant feedback gain, Publication info :FR2897828 (A1) 2007-08-31. Priority date : 2006-02-28. Applicant : RENAULT SAS [FR]
- [9] Plothin, R., Moreaux F. Coudron J., Canudas-de-Wit, C. “Procédé et dispositif de compensation des variations de couple”.Publication info :FR2896753 (A1) 2007-08-03. Priority date :2006-01-27. Applicant : RENAULT SAS [FR].
- [10] Carlos Canudas De Wit, Xavier Claeys, Julien Coudon, and R. Pothin. Method And Device For Controlling The Steering Of A Vehicle, WO2008062121 (A1) 2008-05-29. Priority date : 2006-11-21. Applicant :RENAULT SAS [FR].

- [11] Carlos Canudas De Wit and Carolina Albea-Sanchez. Digital control device for a parallel pmos transistor board, Publication info : US2011295441 (A1)2011-12-01. Priority date : 2008-12-22. Applicant : CNRS and INP.

## Rapports

- [1] Claeys X., Canudas-de-Wit C., Bechart H. “Modelisation Et Commande De L’Actionneur De Direction Des Poids Lourds”. Rapport de contrat INPG-RENAULT 9LS4. Rapport confidentiel.
- [2] Olguin Diaz E., Canudas-de-Wit C., Perrier M. “Nonlinear Control Of An Underwater Vehicle/Manipulator System With Composite Dynamics : Appendix”. Rapport interne.
- [3] Canudas-de-Wit C. “Robust Control Design And Auto-Tunned Pid-Regulators For Drives”. CNRS/ILL collaboration research projet 721585.
- [4] Canudas-de-Wit C. “Control Design For An Electro-Power Steering System”. Research Projet Asco021 (collaboration with Renault).
- [5] Ramirez, J.-J., Avila Vilchis J.C., Canudas-de-Wit C., “ Vehicle Trajectory Predictor With 3D Dynamic Tire/Road Friction Forces”, Report de contrat : ARCOS-Report AP02-207. Dec. 2002
- [6] Martinez, J.-J., Avila Vilchis J.C., Canudas-de-Wit C. “A New Bicycle Model With 3D Dynamic Tire/Road Friction Forces”. Report de contrat : ARCOS-Report, AP02-206. Fevrier 2003.
- [7] Attia S.A., Alamir M., Canudas-de-Wit C., “ Voltage collapse avoidance in power systems : a receding horizon approach”. Notes internes, 2004 rapport contrat projet européen CC (Computation and Control) NI04-120.
- [8] Alireza Farhadi and Carlos Canudas-de-Wit. Multi - level classification and formulation of an integration framework for estimation/ communication/ computation (EC2) co-design. *FeedNet-Back advanced report*, pages 1–39, July 2010.
- [9] C. Canudas-de-Wit, F. Morbidi, L. León Ojeda, A.Y. Kibangou, I. Bellicot, P. Bellemain Grenoble Traffic Lab : An experimental platform for advanced traffic monitoring and control. *IEEE Control Systems Magazine*, July 2014, submitted Draft available at <http://necs.inrialpes.fr/pages/grenoble-traffic-lab.php> following the link **survey paper**
- [10] D. Pisarski and C. Canudas-de-Wit, ”Nash Game Based Distributed Control Design for Balancing of Traffic Density over Freeway Networks”, Under review on *IEEE Trans. on Control of Network Systems*, April (2014).
- [11] F. Morbidi and C. Canudas-de-Wit ”A Linear Markov Jump Filter for Robust Highway Traffic Density Estimation”, Submitted to *Transportation Research Part B*, August (2014)