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Publications (last 10 years), updated March 2014

Books

1. Guzzella L, Sciarretta A (2013), Vehicle Propulsion Systems. Introduction to Modeling and Optimization, 3rd edition, Springer-Verlag, Berlin Heidelberg, ISBN 978-3-642-35912-5, DOI: 10.1007/978-3-642-35913-2.

2. Guzzella L, Sciarretta A (2007), Vehicle Propulsion Systems. Introduction to Modeling and Optimization, 2nd edition, Springer-Verlag, Berlin Heidelberg, ISBN 3540746919.

3. Guzzella L, Sciarretta A (2005), Vehicle Propulsion Systems. Introduction to Modeling and Optimization, Springer-Verlag, Berlin Heidelberg, ISBN 3540251952.

Book chapters

1. Sciarretta A, Di Domenico C, Pognant-Gros P, Zito G (2014) Optimal energy management of automotive battery systems including thermal dynamics and aging, to appear in: Optimization and Optimal Control in Automotive Systems, Springer Lecture Notes in Control Science.

2. Sciarretta A (2013), Supervision des véhicules hybrides (2012), in: Badin (ed.), Les véhicules hybrides. Des composants au système, Editions Technip, Paris, p. 381-420, ISBN 978-2-7108-0986-9. Also in English translation: Control of hybrid vehicles, in Badin (ed.), Hybrid Vehicles, p. 369-411, ISBN 978-2-7108-0994-4.

3. Guzzella L, Sciarretta A (2010), Model-Based supervisory control for energy optimization of hybrid-electric vehicles, in: Levine, W.S. (ed.), The Control Handbook, 2nd Edition, CRC Press, p. 4-1-4-18, DOI: 10.1201/b10382-6.

Journals

1. Dib W, Chasse A, Moulin Ph, Sciarretta A, Corde G (2014), Optimal energy management for an electric vehicle in eco-driving applications, Control Engineering Practice, published online, 2014.

2. Sciarretta A, Serrao L, Dewangan PC, Tona P, Bergshoeff END, Bordons C, Charmpa L, Elbert P, Eriksson L, Hofman T, Hubacher M, Isenegger P, Lcandia F, Laveau A, Li H, Marcos D, Nüesch T, Onori S, Pisu P, Rios J, Silvas E, Sivertsson M, Tribioli L, van der Hoeven AJ, Wu M (2013), A control benchmark on the energy management of a plug-in hybrid electric vehicle, Accepted for publication in Control Engineering Practice.

3. Serrao L, Sciarretta A, Grondin O, Chasse A, Creff Y, Di Domenico D, Pognant-Gros P, Querel C, Thibault L (2013), Open issues in supervisory control of hybride electric vehicles: A unified approach using optimal control methods, Oil & Gas Science and technology, vol. 68, no. 1, p. 23-34, DOI: 10.2516/ogst/2012080 (first published in Proc. of the Int. Scient. Conf. on Hybrid and Electric Vehicles (RHEVE), Rueil-Malmaison, France, 6-7 December 2011).

4. Merz F, Sciarretta A, Dabadie JC, Serrao L (2012), On the optimal thermal management of hybrid-electric vehicles with heat recovery systems, Oil & Gas Science and Technology, vol. 67, no. 4, p. 610-612, DOI: 10.2516/ogst/2012017.

5. Dib W, Chasse A, Di Domenico D, Moulin Ph, Sciarretta A (2012), Evaluation of the energy efficiency of a fleet of electric vehicles for eco-driving application, Oil & Gas Science and Technology, vol. 67, no. 4, p. 589-600, DOI: 10.2516/ogst/2012023.

6. Chasse A, Sciarretta A (2011), Supervisory control of hybrid powertrains: an experimental benchmark of offline optimization and online energy management, Control Engineering Practice, vol. 19, no. 11, p. 1253-1265, DOI: 10.1016/j.conengprac.2011.04.008.

7. Marc N, Prada E, Sciarretta A, Anwer S, Vangraefschèpe F, Badin F, Charlet A, Higelin P (2011), Sizing and fuel consumption evaluation methodology for hybrid light duty vehicles, World Electric Vehicle Journal 4(1), pp. 249-258 (first published in Proc. of the 25th World Battery, Hybrid, and Fuel Cell Electric Vehicle Symposium and Exhibition (EVS), Shenzhen, China, November 5-9, 2010).

8. Ambühl D, Sundström O, Sciarretta A, Guzzella L (2010), Explicit optimal control policy and its practical application for hybrid electric powertrains, Control Engineering Practice, vol. 18, no. 8, p. 1429-1439, DOI: 10.1016/j.conengprac.2010.08.003.

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10. Bernard J, Touzani Y, Sciarretta A, Sauvant-Moynot V (2010), Advances in electrochemical models for predicting the cycling performance of traction batteries: experimental study on Ni-MH and simulation, Oil & Gas Science and Technology, vol. 65, no. 1, p. 55-66, DOI: 10.2516/ogst/2009060 (first published in Proc. of the IFP Int. Conf. on Advances in Hybrid Powertrains, Rueil-Malmaison, France, November 25-26, 2008).

11. Chasse A, Pognant-Gros P, Sciarretta A (2009), Online implementation of an optimal supervisory control for a parallel hybrid powertrain, SAE Int. J. Engines, vol. 2, no. 1, p. 1630-1638, paper 2009-01-1868, DOI: 10.4271/2009-01-1868 (first published in Proc. of the SAE Int. Powertrains, Fuels and Lubricants Meeting, Florence, Italy, June 15-17, 2009).

12. Sciarretta A, Corde G (2007), Model-based compensation of the injector dynamics for multiple-injection combustion patterns, SAE Trans., Journal of Engines, vol. 116, 2008, pp. 1589-1597 (first published in Proc. of the 8th International Conference on Engines for Automobile (ICE 2007), Capri, Italy, September 16-20, 2007, SAE paper no. 2007-24-0071).

13. Sciarretta A, Guzzella L (2007), Control of hybrid electric vehicles. Optimal energy-management strategies, Control Systems Magazine, vol. 27, no. 2, p. 60-70, DOI: 10.1109/MCS.2007.338280.

14. Sciarretta A (2006), A lattice gas model with temperature and buoyancy effects to predict the concentration of pollutant gas released by power plants and traffic sources, Mathematical and Computer Modelling of Dynamical Systems, vol. 12, no. 4, p. 313-327, DOI: 10.1080/13873950500068559.

15. Guzzella L, Sciarretta A (2005), Fuel-optimal control of rendezvous maneuvers for passenger cars, at-Automatisierungstechnik, vol. 53, no. 6, p. 237-243, DOI: 10.1524/auto.53.6.244.65604.

16. Rodatz P, Paganelli G, Sciarretta A, Guzzella L (2005), Optimal power management of an experimental fuel cell/supercapacitor powered hybrid vehicle, Control Engineering Practice, vol. 13, no. 1, p. 41-53, DOI: 10.1016/j.conengprac.2003.12.016.

17. Sciarretta A, Back M, Guzzella L (2004), Optimal control of parallel hybrid electric vehicles, IEEE Transactions on Control Systems Technology, vol. 12, no. 3, p. 352-363, DOI: 10.1109/TCST.2004.824312.

18. Sciarretta A, Onder C, Guzzella L (2003), On the power split control of parallel hybrid vehicles: from global optimization to real-time control, at-Automatisierungstechnik, vol. 51, no. 5, p. 195-203, DOI: 10.1524/auto.51.5.195.19568.

Edited journal issues

1. Oil & Gas Science and Technology, vol. 68 (2013), no. 1, Special issue on IFP Energies nouvelles International Conference: RHEVE 2011: International Conference on Hybrid and Electric Vehicles.

2. Oil & Gas Science and Technology, vol. 67 (2012), no. 4, Special issue on Electronic Intelligence in Vehicles.

3. Oil & Gas Science and Technology, vol. 65 (2010), no. 1, Special issue on IFP International Conference: Advances in Hybrid Powertrains.

Conferences

1. Maamria Dj, Chaplais F, Petit N, Sciarretta A (2014), Numerical optimal control as a method to evaluate the benefit of thermal management in hybrid electric vehicles, Accepted, the 19th IFAC World Congress, Cape Town, 24-29 August, 2014.

2. Peralez J, Tona P, Sciarretta A, Dufour P, Nadri M (2014), Optimal control of a vehicular organic Rankine cycle via dynamic programming with adaptive discretization grid, Accepted, the 19th IFAC World Congress, Cape Town, 24-29 August, 2014.

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4. Magand S, Sciarretta A, Sinoquet D (2013), Modular methodology to optimize innovative drivetrains, Proc. of the SAE Conference on Engines and Vehicles (ICE), Capri, Italy, September 15-19, 2013, DOI: 10.4271/2013-24-0080.

5. Manzie C, Grondin O, Sciarretta A, Zito G (2013), Robustness of ECMS-based Optimal Control in Parallel Hybrid Vehicles, Proc. of the 7th IFAC Symposium on Advances in Automotive Control (IFAC-AAC), Tokyo, Japan, September 4-7, 2013, DOI: 10.3182/20130904-4-JP-2042.00120.

6. Manzie C, Dewangan P, Corde G, Grondin O, Sciarretta A (2013), State of charge management for plug in hybrid electric vehicle with uncertain distance to recharge, Proc. of the Asian Control Conference (AsCC), Istanbul, Turkey, June 23-26, 2013, recipient of the 2013 ASCC Best Application Paper Award, DOI: 10.1109/ASCC.2013.6606064.

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9. Tona P, Peralez J, Sciarretta A (2012), Supervision and control prototyping for an engine exhaust gas heat recovery system based on a steam Rankine cycle, Proc. of the IEEE/ASME Int. Conf. on Advanced Intelligent Mechatronics (AIM), KaoHsiung, Taiwan, July 11-14, 2012, DOI: 10.1109/AIM.2012.6266053.

10. Falières Q, Grasset O, Roblet K, Xu Y, Noiret C, Serrao L, Sciarretta A (2011), A contradictory analysis of GM Voltec powertrain, Proc. of the European Electric Vehicle Congress (EEVC), Brussels, Belgium, October 26-28, 2011.

11. Petit N, Sciarretta A (2011), Optimal drive of electric vehicles using an inversion-based trajectory generation approach, Proc. of the 18th IFAC World Congress, Milano, Italy, August 28-September 2, 2011, DOI: 10.3182/20110828-6-IT-1002.01986.

12. Dib W, Serrao L, Sciarretta A (2011), Optimal Control to minimize trip time and energy consumption in electric vehicles, Proc. of the IEEE Vehicle Power and Propulsion Conf. (VPPC), Chicago, IL, 6-7 September 2011, DOI: 10.1109/VPPC.2011.6043133.

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15. Lescot J, Sciarretta A, Chamaillard Y, Charlet A (2010), On the integration of optimal energy management and thermalmanagement of hybrid electric vehicles, Proc. of the IEEE Vehicle Power and Propulsion Conf. (VPPC), Lille, France, September 1-3, 2010, DOI: 10.1109/VPPC.2010.5729158.

16. Chasse A, Sciarretta A, Chauvin J (2010), Online optimal control of a parallel hybrid with costate adaptation rule, Proc. of the IFAC Symposium on Advances in Automotive Control, Munich, Germany, July 12-14, 2010, DOI: 10.3182/20100712-3-DE-2013.00134.

19. Chasse A, Hafidi G, Pognant-Gros P, Sciarretta A (2009), Supervisory control of hybrid powertrains: an experimental benchmark of offline optimization and online energy management, Proc. of the IFAC Workshop on Engine and Powertrain Control, Simulation and Modeling, Rueil-Malmaison, France, November 30-December 2, 2009, DOI: 10.3182/20091130-3-FR-4008.00015.

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18. Ceccarelli R, Canudas de Wit C, Moulin P, Sciarretta A (2009), Model-based adaptive observers for intake leakage detection in Diesel engines, Proc. of the IEEE American Control Conf. (ACC), Saint Louis, MO, June 10-12, 2009, DOI: 10.1109/ACC.2009.5160133.

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25. Ambühl D, Sciarretta A, Onder C, Guzzella L, Sterzing S, Mann K, Kraft D, Küsell M (2007), A causal operation strategy for hybrid electric vehicles based on optimal control theory, Proc. of the 4th Braunschweig Symposium on Hybrid Vehicles and Energy Management, Braunschweig, Germany, February 14-15, 2007, ISBN 3937655109.

26. Cipollone R, Sciarretta A (2006), Analysis of the potential performance of a combined hybrid vehicle with optimal supervisory control, Proc. of the IEEE Int. Conf. on Control Applications, Munich, Germany, October 4-6, 2006, DOI: 10.1109/CACSD-CCA-ISIC.2006.4777082.

27. Anatone M, Cipollone R, Sciarretta A (2006), Sviluppo di un sistema di propulsione ibrido serie e simulazione delle prestazioni su percorsi stradali (in Italian), Atti del Congresso Nazionale ATI, Perugia, September 12-15, 2006.

28. Cipollone R, Contaldi G, Sciarretta A, Tufano R, Villante C (2006), A theoretical model and experimental validation of a sliding vane rotary compressor, Proc. of the Int. Compressor Engineering Conf. at Purdue, July 17-20, 2006.

29. Cannavò C, Cipollone R, Pinamonti SA, Sciarretta A (2006), Innovative air estimation and Luemberger observers in model-based A/F control, Proc. of the 8th Biennial ASME Conf. on Engineering Systems Design and Analysis (ESDA), Turin, Italy, July 4-7, 2006, DOI: 10.1115/ESDA2006-95641.

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34. Sciarretta A, Guzzella L, Back M (2004), A real-time optimal control strategy for parallel hybrid vehicles with on-board estimation of the control parameters, Proc. of the IFAC Symposium on Advances in Automotive Control (AAC), Salerno, Italy, April 19-23, 2004.

35. Cipollone R, Sciarretta A (2003), Mean value models for the air dynamics in engine intake manifolds, Proc. of the International Conference on Transport Means, Kaunas, Lithuania, October 23-24, 2003.

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39. Guzzella L, Sciarretta A (2003), Global optimization of rendez-vous maneuvers for passenger cars, Proc. of the 5th Stuttgart International Symposium on Automotive and Engine Technology, Stuttgart, Germany, February 18-20, 2003.

Patents

1. a) Procédé de détermination d'un indicateur énergétique d'un déplacement d'un véhicule (Process of determination on an energetic indicator of vehicle displacements), filed to the French Patent Office with no. 12/02.351 (2012).
   b) Method of determining an eco-driving indicator for the travel of a vehicle, filed to the US Patent Office with no. 13/966.355 (2013).
2. Système pour l'étude d'un groupe motopropulseur d'un véhicule hybride (System for the study of an hybrid propulsion system), filed to the French Patent Office with no. 10/01.692 (2010), **granted** with no. 2959310 (2012).
3. a) Méthode pour estimer les caractéristiques non mesurables d'un système électrochimique (Method of estimating the non-measurable characteristics of an electrochemical system), filed to the French Patent Office with no. 08/01.709 (2008), **granted** with no. 2929410 (2011),
   b) System for smart management of an electrochemical battery, filed to the US Patent Office with no. 12/919.721 and 12/919.731 (2009), granted with no. 8.487.628, 2013 and 8.532.945 (2013).
4. a) Méthode pour compenser la dynamique des injecteurs dans le cas des injections multiples de carburant dans un moteur à combustion interne (Method to compensate the dynamics of the injectors in internal combustion engines with multiple injection patterns), filed to the French Patent Office with no. 07/06.200 (2007), **granted** with no. 2920479 (2009)
   b) Méthode d'injection de carburant dans un moteur à combustion interne (Method of injecting fuel in an internal combustion engine), filed to the European Patent Office with no. 08290726.2 (2008), **granted** with no. 2034164 (2012).
5. Verfahren zur Bestimmung eines Leistungsaufteilfaktors in Hybridfahrzeugen (Method to determine a power split factor in hybrid vehicles, or: Engine output divide factor determination method between power produced by fuel converter and electric motor of hybrid vehicle, determines adaptive equivalence factor for weighting electrical energy consumption value), filed to the German Patent Office with no. 10323722.4 (2004).

Presentations (recent)

1. Optimal grid-to-meters energy management of electrified vehicles, e-mobil BW Technologietag, Stuttgart, October 2, 2013.
2. Optimal energy management of automotive battery systems (including thermal dynamics and aging), Workshop on Optimization and Optimal Control of Automotive Systems, Linz, July 16, 2013.
3. Efficacité énergétique des véhicules hybrides-électriques: le rôle de la gestion de l'énergie, Journée technique du groupement français de coordination (GFC), Saint-Cloud, November 22, 2012.
4. Energy management in hybrid-electric vehicles. The role of control strategies, Ulysses Workshop on LD and HD vehicles technologies for CO2 reduction, Ispra, September 21, 2012.
5. Optimisation prédictive de la conduite de véhicules électriques – éco-conduite optimale (2012), Séminaire du groupe thématique Modélisation énergétique et gestion d'énergie de véhicules hybrides (MEGEVH), Paris, July 9, 2012.
6. Optimal control of hybrid vehicles, Summer school on Model-based automotive control, Johannes Kepler Univ., Linz, August 25-27, 2010.

Others

1. La voiture électrique a aussi son éco-conduite, Science@ifpen, no. 8, November 2011, www.ifpenergiesnouvelles.fr
2. Gestion optimale de l'énergie dans les véhicules hybrides, Science@ifp, no. 5, May 2009, www.ifpenergiesnouvelles.fr

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2. IFP School (Charmpa L, Dewangan PC, Falières Q, Grasset O, Laveau A, Li H, Roblet K, Xu Y, Wu M).
3. ETH (Ambühl D, Elbert P, Guzzella L, Hubacher M, Isenegger P, Merz F, Nüesch T, Onder Ch, Paganelli G, Rodatz P, Sundström O).
4. Ohio State Univ. (Guezennec Y, Lacandia F, Onori S, Rizzoni G, Tribioli L).
5. Univ. Sevilla (Bordons C, Marcos D).
6. Univ. Linköping (Eriksson L, Sivertsson M).
7. Clemson Univ. (Pisu P, Rios J).
8. TU Eindhoven (Bergshoeff END, Hofman T, Silvas E, van Baalen J, van der Hoeven AJ).
9. Univ. Melbourne (Manzie C).
10. Polytech. Orléans (Chamaillard Y, Charlet A, Higelin P).
11. EC Lyon (Dufour P, Nadri M).
12. Mines Paris (Petit N, Chaplais F).
13. Polytech. Grenoble (Canudas de Wit C).
14. Univ. L'Aquila (Anatone M, Cannavò C, Carapellucci R, Cipollone R, Donati A, Pinamonti SA, Villante C).
15. Dana Corp. (Serrao L).
16. PSA (Noiret C).
17. Bosch (Kraft D, Küsell M, Mann K, Sterzing S).
18. Daimler (Back M).
19. Ing. Enea Mattei (Contaldi G, Tufano R).
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