

Jorge Cortés

Curriculum vitae

October 2017

Mechanical and Aerospace Engineering
Jacobs School of Engineering
University of California, San Diego
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Current Position

Professor (since Jul 2014; Associate Professor Jul 2009–Jun 2014; Assistant Professor Jul 2007–Jun 2009)
Department of Mechanical and Aerospace Engineering
University of California, San Diego, CA (Jul 2007–present)

Previous Positions

Assistant Professor, Department of Applied Mathematics and Statistics
University of California, Santa Cruz, CA (Oct 2004–Jun 2007)
Postdoctoral Research Associate, Coordinated Science Laboratory, College of Engineering
University of Illinois at Urbana-Champaign, Urbana, IL (Aug 2002–Sep 2004)
Postdoctoral Research Associate, Systems, Signals and Control Department
University of Twente, The Netherlands (Nov 2001–Jun 2002)

Education

Ph.D., Engineering Mathematics, Universidad Carlos III de Madrid, Spain Dec 2001
Licenciado, Mathematics, Universidad de Zaragoza, Spain Jun 1997

Research Interests

Systems and Control; Cooperative Control and Swarm Robotics; Distributed Network Science; Game Theory; Multi-Agent Coordination in Robotics, Power Systems, and Neuroscience; Geometric and Distributed Optimization; Nonsmooth Analysis; Geometric Mechanics and Control.

Citation Metrics (October 16, 2017)

[Thomson Reuters \(ISI\)](#): h-index 27, sum of cites 4161
[Google Scholar](#): h-index 42, sum of cites 11133

Research Awards and Honors

IEEE Fellow, Class of 2014
IEEE Control Systems Society Distinguished Lecturer, 2010
Outstanding Reviewer for IEEE Transactions on Automatic Control, 2009
Young Researcher Prize, awarded by the Spanish Society of Applied Mathematics to the “most promising applied mathematician under 33 born or working permanently in Spain,” 2006
NSF CAREER Award, Division of Electrical, Communications and Cyber Systems (Power, Controls and Adaptive Networks), 2006
Ramón y Cajal Program Awardee, Mathematics, ranked 1st, Spanish Ministry of Science and Technology, Madrid, Spain, 2003
Best Doctoral Dissertation Award, Engineering Mathematics Curriculum, Academic Year 2001-2002, Universidad Carlos III de Madrid, Spain, 2003

AACC O. Hugo Schuck Best Paper Award in the Theory category (w/ C. Nowzari), 2012
SIAM Review SIGEST selection from the SIAM Journal on Control and Optimization (w/ F. Bullo), 2009
IEEE Control Systems Magazine Outstanding Paper Award (w/ S. Martínez and F. Bullo), 2008

Best Student Paper Award Winner:

American Control Conference (w/ A. Ganguli -student- and F. Bullo), Minneapolis, Minnesota, 2006
IEEE Conference Decision and Control (w/ S. Martínez -student- and F. Bullo), Las Vegas, Nevada, 2002

Best Student Paper Award Finalist:

American Control Conference (w/ A. Cherukuri -student), Chicago, Illinois, 2015
American Control Conference (w/ C. Nowzari -student), San Francisco, California, 2011
American Control Conference (w/ A. Ganguli -student- and F. Bullo), Portland, Oregon, 2005

Plenary and Other Invited Lectures

Semi-Plenary Speaker, 10th IFAC Symposium on Nonlinear Control Systems (NOLCOS), Monterey, California Aug. 23-25, 2016

Plenary Speaker, 28th Benelux Meeting on Systems and Control, Spa, Belgium, Mar 2009

Plenary Speaker, International Workshop on Global Analysis, Cankaya University, Ankara, Turkey, Apr 2004

Plenary Speaker, 34th Symposium on Mathematical Physics, Torun, Poland, Jun 2002

Invited Speaker

Emphasis Workshop: Control And Observability of Network Dynamics, Mathematical Biosciences Institute, Cleveland, Ohio, Apr 2016

Workshop on Frontiers in Distributed Optimization and Control of Sustainable Power Systems, National Renewable Energy Laboratory, Golden, Colorado, Jan 2016

IMA Thematic Year on Control and Its Applications, Workshop on Analysis and Control of Network Dynamics, Minneapolis, Minnesota, Oct 2015

IMA New Directions Short Course Topics in Control Theory, "Week 2: Distributed Optimization and Control", Minneapolis, Minnesota, Jun 2014

deLeonfest, a Workshop to Celebrate the 60th Birthday of Manuel de Leon and his Research Contributions, ICMAT, Madrid, Spain, Dec 2013

Workshop on the Distributed Control of Large Scale Systems, Pacific Northwest National Laboratory, Richland, Washington, Mar 2013

International Workshop on Recent Developments In Robotics and Control In Celebration of Mark W. Spong's 60th Birthday, UT Dallas, Nov 2012

2012 Southern California Symposium on Network Economics and Game Theory, University of Southern California, Nov 2012

Workshop on Multi-Agent Control Applications, Concordia University, Apr 2012

2011 Santa Barbara Control Workshop: Decision, Dynamics and Control in Multi-Agent Systems, UCSB, Jun 2011

CONNECT Frontiers in Science and Technology Speaker, San Diego, California, Feb 2010

Invited Speaker, Natural Algorithms Workshop, Center for Computational Intractability, Princeton University, Nov 2009

Invited Lectures at Universities

Australian National University (Sep 07), Boston University (Nov 07), ETH Zürich (Nov 14), Georgia Institute of Technology (Feb 14), Ghent University (Belgium, Jun 01 and Aug 05), High Council of Scientific Research (Spain, Dec 06), International Center of Mathematical Meetings (Spain, Sep 06), Massachusetts Institute of Technology (Nov 10), Monterey Bay Aquarium Research Institute (May 05), Montreal Polytechnique (GERAD, Mar 17), Naval Postgraduate School (Nov 05), Queen's University (Canada, Mar 03), Stanford University (Feb 07), Universidad Complutense de Madrid (Spain, Jul 03), Universidad Politécnica de Cataluña (Spain, Feb 01, Feb 02, Jan 03, Jan 04, and Dec 07), University of Arizona (Apr 12), University of California, Berkeley (MSRI, Mar 07 and Oct 13), University of California, Irvine (Feb 16), University of California, Los Angeles (May 07, Feb 12), University of California, Riverside (Nov 16), University of California, San Diego (Mar 07, Feb 14), University of California, Santa Barbara (Nov 05), University of California, Santa Cruz (Feb 04

and Oct 04), University of Florida (Nov 13), University of Georgia (Feb 03), University of Illinois at Urbana-Champaign (Dec 02, Oct 03, Apr 12, Mar 15), University of Maryland, College Park (Jun 09), University of Minnesota (Apr 04), University of Oklahoma (Apr 17), University of Pennsylvania (Swarms Workshop, May 07 and Apr 11), University of Texas at San Antonio (Apr 16), University of Twente (The Netherlands, Nov 01 and Apr 03), University of Wisconsin-Madison (Feb 04), Yale University (Jan 17).

Research Grants

Current

PI in NSF ECCS-1307176, "Self-Triggered Coordination of Robotic Networks", Duration: 9/1/13-8/31/18, Amount: \$290,665

PI in NSF CNS-1329619, "CPS: Breakthrough: Robust Team-Triggered Coordination for Real-Time Control of Networked Cyber-Physical Systems", Duration: 10/1/13-9/30/18, Amount: \$463,607

Co-PI in NSF CNS-1446891, "CPS: Synergy: Triggered Control of Cyber Physical Systems with Communication Channels Constraints", Duration: 1/1/15-12/31/17, Amount: \$1,000,000

PI in AFOSR FA9550-15-1-0108, "Triggered Control for Distributed Optimization and Learning in Networked Multi-Agent Systems", Duration: 5/15/15-5/14/18, Amount: \$421,571

co-PI in ARPA-e NODES DE-AR0000695, "Distributed Grid Control of Flexible Loads and DERs for Optimized Provision of Synthetic Regulating Reserves", Duration: 6/13/16-6/12/19, Amount: \$2,886,437

PI in ONR N00014-16-1-2836, "Exploiting Cheap Computation for Optimal Cooperative Navigation and Lengthened Mission Duration", Duration: 9/1/16-10/31/19, Amount: \$225,000

Expired

PI in NASA University Aligned Research Program Award TO.030.MM.D., "Distributed formation control strategies for science imaging and interferometry", Duration: 12/1/04-9/30/05, Amount: \$28,406, and Duration: 10/1/05-9/30/06, Amount: \$ 30,298

Co-PI in NSF CNS-0521675, "MRI: Development of an Autonomous Robotic Vehicle Instrument", Major Research Instrumentation initiative, Duration: 10/1/05-3/31/12, Amount: \$360,021

PI in NSF ECCS-0546871, "CAREER: Information-driven distributed coordination of mobile sensor networks in dynamic scenarios", Duration: 3/1/06-2/28/13, Amount: \$400,000

Co-PI in NSF CCF-0829891, "The control landscape of selective cell death", Emerging Models and Technologies initiative, Duration: 9/1/08-8/31/13, Amount: \$900,000

PI in NSF CMMI-0908508, "DynSyst.Special.Topics: Couplings, network dynamics, and stability of multi-agent systems", Duration: 7/15/09-6/30/13, Amount: \$280,000

PI in NSF CCF-0917166, "NetSE: Small: Collaborative Proposal: A Geometric Computational Approach to Efficiently Deploy and Manage Self-Organizing Wireless Communication Networks", Duration: 8/15/09-7/31/13, Amount: \$250,000

Co-PI in AFOSR FA9550-10-1-0499, "Games, Information, and Deception Exploitation for Adversarial Network Systems", Duration: 7/1/10-6/30/14, Amount: \$918,501

PI in NSF OCE-0941692, "CDI Type-II: Distributed Ocean Monitoring via Integrated Data Analysis of Coordinated Buoyancy Drogues", Duration: 1/1/10-12/31/15, Amount: \$1,359,000

PI in NSF CMMI-1300272, "Robust Distributed Online Convex Optimization", Duration: 4/15/13-3/31/17, Amount: \$280,000

PI in UCSD Contextual Robotics Seed Funding through Northrop Grumman Sponsorship, "Swarm Coordination in Disaster Response Operations", Duration: 6/1/15-5/31/17, Amount: \$140,000

Professional Service

Editorial Board

[IEEE Access](#), 2015-present

[Journal of Geometric Mechanics](#), 2011-present

[European Journal of Control](#), 2006-2009

[Systems and Control Letters](#), 2009-2012

[IEEE Transactions on Automatic Control](#), 2010-2012

[SIAM Journal on Control and Optimization](#), 2011-2016
[IEEE Control Systems Magazine](#), 2012-2016
[IEEE Transactions on Network Science and Engineering](#), 2014-2017

Guest Editor

[IEEE Robotics and Automation Magazine](#) Special Issue on “Computational Geometry in Path Planning,” volume 15, issue 2, Jun 2008
[SIAM Journal on Control and Optimization](#) Special Issue on “Control and Optimization in Cooperative Networks,” volume 48, number 1, Jan 2009
[IEEE Control Systems Magazine](#) Special Issue on “Distributed Control and Estimation of Robotic Vehicle Networks,” volume 36, number 2, April 2016 and number 4, August 2016

Section Editor

[Encyclopedia of Systems and Control](#), Section on “Control of Networked Systems”, J. Baillieul and T. Samad, editors-in-chief, Springer Verlag, New York, 2014

Conference Editorial Board

Associate Editor, Conference Editorial Board, IEEE Control Systems Society, 2005-2009
Associate Editor, Conference Editorial Board, IEEE Robotics and Automation Society, 2010-2012

Membership in Professional Societies

Fellow IEEE (Control Systems Society), 2014 (member '02, senior member '06)
Member SIAM (Activity Group on Control and Systems Theory), 2003-present
Member Spanish Society of Applied Mathematics, 2004-present
Member AMS, 2005-2012
Member Royal Spanish Mathematical Society, 2000-2007

Elected or Appointed Positions in Professional Societies

Chair, IEEE Control Systems Society Technical Committee on Manufacturing Automation and Robotic Control, Jan 2009-Dec 2012
Secretary, SIAM Activity Group on Control and Systems Theory, 2012-2013 term
Member, Board of Governors, IEEE Control Systems Society, 2018-2020 term

Conference and Workshop Organization

Organizer, Southern California Control Workshop, [16th edition](#) (University of California, San Diego, Nov 7, 2008), [23rd edition](#) (University of California, San Diego, Nov 30, 2012), [30th edition](#) (University of California, San Diego, Jun 3, 2016)
Workshop Chair, [CDC 2010](#), IEEE Conference on Decision and Control, Atlanta, Georgia, Dec 15-17, 2010
Organizing Committee, [SIAM CT11](#), SIAM Conference on Control and Its Applications, Baltimore, Maryland, Jul 25-27, 2011
Program Co-Chair, [NecSys2012](#), 3rd IFAC Workshop on Distributed Estimation and Control in Networked Systems, Santa Barbara, California, Sep 14-15, 2012
Special Sessions Chair, [ACC 2015](#), American Control Conference, Chicago, Illinois, Jul 1-3, 2015
Organizing Committee, [SCR 2016](#), Southern California Robotics Symposium, UC San Diego, Apr 22, 2016
National Organizing Committee, [NOLCOS 2016](#), IFAC Symposium on Nonlinear Control Systems, Monterey, California, Aug 23-25, 2016
Program Vice-Chair, [CDC16](#), IEEE Conference on Decision and Control, Las Vegas, Nevada, Dec 12-16, 2016

Program and Scientific Committees

ADHS – *Analysis and Design of Hybrid Systems*: [ADHS 2015](#) (Oct 14 - Oct 16, 2015, Atlanta, Georgia)
ACC – *American Control Conference*: [ACC 2010](#) (Jun 30 - Jul 2, 2010, Baltimore, Maryland), [ACC 2018](#) (Jun 27 - Jun 29, 2018, Milwaukee, Wisconsin)
CCTA – *IEEE Conference on Control Technology and Applications*: [CCTA 2017](#) (Aug 27-30, 2017, Hawaii, Hawaii), [CCTA 2018](#) (Aug 21-24, 2018, Copenhagen, Denmark)

CDC – *IEEE Conference on Decision and Control*: [CDC 2009](#) (Dec 16-18, 2009, Shanghai, China), [CDC 2014](#) (Dec 15-17, 2014, Los Angeles, California)

DARS – *International Symposium on Distributed Autonomous Robotic Systems*: [DARS 2010](#) (Nov 1-3, 2010, Lausanne, Switzerland), [DARS 2016](#) (Nov 7-9, 2016, London, United Kingdom)

DELEONFEST – *a Workshop to Celebrate the 60th Birthday of Manuel de Leon and his Research Contributions*, [DELEONFEST](#) (Dec 16-19, 2013, Madrid, Spain)

EBCCSP – *IEEE International Conference on Event-Based Control, Communication, and Signal Processing*: [EBCCSP 2015](#) (Jun 17-19, 2015, Krakow, Poland)

ECC – *European Control Conference*: [ECC 2013](#) (Jul 17-19, 2013, Zürich, Switzerland)

GTMCRCR – *Workshop on Geometric and Topological Methods in Control and Robotics*: [GTMCRCR2010](#) (Oct 4-6, 2010, La Cristalera, Madrid, Spain)

ICC – *Indian Control Conference*: [ICC 2016](#) (Jan 4 - Jan 6, 2016, Hyderabad, India)

MED – *Mediterranean Conference on Control and Automation*: [MED 2011](#) (Jun 20-23, 2011, Corfu, Greece), [MED 2012](#) (Jul 3-6, 2012, Barcelona, Spain), [MED 2013](#) (Jun 25-28, 2013, Crete, Greece), [MED 2015](#) (Jun 16-19, 2015, Torremolinos, Spain)

MSC – *IEEE Multi-Conference on Systems and Control*: [MSC 2016](#) (Sep 19 - Sep 22, 2016, Buenos Aires, Argentina)

MTNS – *International Symposium on Mathematical Theory of Networks and Systems*: [MTNS 2014](#) (Jul 7-11, 2014, Groningen, the Netherlands), [MTNS 2016](#) (Jul 11-15, 2016, Minneapolis, Minnesota, USA)

NECSYS – *IFAC Workshop on Distributed Estimation and Control in Networked Systems*: [NecSys2009](#) (Sep 24-26 2009, Venice, Italy), [NecSys2010](#) (Sep 13-14, 2010, Annecy, France), [NecSys2013](#) (Sep 25-26, 2013, Koblenz, Germany)

ROBOCOMM – *International Conference on Networked Robots*: [ROBOCOMM 07](#) (Sep 10-12, 2007, Athens, Greece), [ROBOCOMM 09](#) (Mar 31- Apr 2, 2008, Odense, Denmark)

RSS – *Robotics: Science and Systems*: [RSS08](#) (Jun 25-28, 2008, Zurich, Switzerland), [RSS17](#) (Jul 12-16, 2017, Boston, Massachusetts)

SAC-IRMAS – *ACM Symposium On Applied Computing: Intelligent Robotics and Multi-Agent Systems technical track* [SAC18-IRMAS](#) (Apr 9-13, 2018, Pau, France)

WAFR – *Workshop on the Algorithmic Foundations of Robotics*: [WAFR 2012](#) (Jun 13-15, 2012, Cambridge, Massachusetts, USA)

Reviewer, ACM Transactions on Sensor Networks; Automatica; ASME Journal of Dynamic Systems, Measurement, and Control; Cyber-Physical Systems; Discrete and Continuous Dynamical Systems; Discrete Event Dynamic Systems: Theory and Applications; European Journal of Control; IEEE Transactions on Automatic Control; IEEE Transactions on Automation Science and Engineering; IEEE Transactions on Control Systems Technology; IEEE Transactions on Robotics; IEEE Transactions on Signal Processing; IET Control Theory and Applications; International Journal of Control; International Journal of Robotics Research; International Journal of Robust and Nonlinear Control; Journal of Geometric Mechanics; Journal of Geometry and Physics; Journal of Nonlinear Science; Journal of Physics A: Mathematical and General; Journal of the Royal Academy of Sciences of Madrid, Series A, Mathematics; Mathematics of Control, Signals, and Systems; Methods and Applications of Analysis; Neural Computing and Applications; Physics Letters A; Proceedings of the IEEE; Reports on Mathematical Physics; SIAM Journal on Applied Dynamical Systems; SIAM Journal on Control and Optimization; Symmetry, Integrability and Geometry: Methods and Applications

Reviewer, Springer-Verlag; Prentice Hall; John Wiley&Sons; World Scientific Publishing

Reviewer, American Control Conference, IEEE Conference on Decision and Control, IEEE Conference on Robotics and Automation, IEEE Multi-Conference on Systems and Control, IEEE/RSJ International Conference on Intelligent Robots and Systems, IFAC World Congress, IFAC Symposium on Nonlinear Control Systems, Hybrid Systems: Computation and Control, IEEE Conference on Automation Science and Engineering, IFAC Symposium on System Identification, Robotics: Science and Systems, International Workshop in Global Analysis

Reviewer, U.S. Civilian Research and Development Foundation (CRDF), Cooperative Grants Program, 2003

Reviewer, Spanish Ministry of Science and Technology grant proposals (2004, 2005)

Reviewer, Israel Science Foundation, 2007

Reviewer and panelist, National Science Foundation (Civil, Mechanical and Manufacturing Innovation, 2008, 2009, 2011 (2), 2012, 2014, 2017; Cyber-Physical Systems, 2009; Applied Mathematics, 2010, 2016; Robotics Initiative, 2015)

Reviewer, Air Force Office of Scientific Research (Dynamics and Control Program, 2009, 2010, 2012-2014, 2016)

Reviewer, Army Research Office (Network Sciences Program, 2017)

Reviewer, Natural Sciences and Engineering Research Council of Canada, 2011

Reviewer, General Secretariat of Research and Technology, Greek Ministry of Education, 2013

Reviewer, European Research Council, Consolidator Grants, European Commission, 2016

Software Development

Mathematica packages PlanGeom.m and SpatialGeom.m, planar and spatial geometry computation

University Service

MAE Vice Chair, 2014-2016

MAE Graduate Affairs Committee, member, 2008-2009, 2010-2011, 2013-2014

MAE Undergraduate Affairs Committee, member, 2009-2010, 2012-2013, chair 2014-2016

MAE ABET Committee, member, 2011-2012

MAE Robotics Search Committee, member, 2014-2015

SOE Committee on Joint UCSD/SDSU Doctoral Degree Program, MAE faculty representative, 2010-2014

SOE Strategic Planning, Graduate Program Workgroup, member, Winter 2013

Sixth College Commencement, MAE faculty representative, 2011

Sixth College Provost Search Committee, member, 2011-2012

Academic Senate's Committee on Campus and Community Environment, member, 2011-2014

Chancellor's Campus and Community Planning Committee, member, 2011-2014

Sixth College Provost Review Committee, member, 2017

UCSC AMS Search Committee, 2005-2006 (Applied Math), 2006-2007 (Statistics)

UCSC AMS Departmental Webmaster, 2004-2007

Postdoctoral Research Associates

Chin-Yao Zhang (2016-, co-advised with Prof. Sonia Martínez)

Bahman Gharesifard (2009-2012). Now Assistant Professor at Department of Mathematics and Statistics, Queen's University, Canada

Solmaz S. Kia (2012-2014, co-advised with Prof. Sonia Martínez). Now Assistant Professor at Department of Mechanical and Aerospace Engineering, University of California, Irvine

Michael Ouimet (2014-2015, co-advised with Prof. Sonia Martínez). Now Engineer at Unmanned Maritime Vehicles Laboratory, SPAWAR Systems Center Pacific, San Diego

Yingbo Zhao (2015-2016). Now Senior Algorithms Engineer at Cymer Corporation

Pavan Tallapragada (2014-2017). Now Assistant Professor at Department of Electrical Engineering, Indian Institute of Science

Kooktae Lee (2016-2017). Now Assistant Professor at Department of Mechanical Engineering, New Mexico Institute of Mining and Technology

Graduate Students

Yifu Zhang (UCSD MAE, Ph.D. student, 2014-)

Erfan Nozari (UCSD MAE, Ph.D. student, 2014-)

Aaron Ma (UCSD MAE, Ph.D. student, 2016-)

Pio Ong (UCSD MAE, Ph.D. student, 2016-)

Priyank Srivastava (UCSD MAE, Ph.D. student, 2016-)

Masih Haseli (UCSD MAE, Ph.D. student, 2017-)

Anurag Ganguli (UIUC EE, Ph.D. 2007, co-advised with Francesco Bullo, UCSB). Now Senior Engineer at PlusAI

Michael Schuresko (UCSC CS, M.Sc. 2008 and UCSC AMS, Ph.D. 2009). Now at Senior Engineer at Oblong Industries Inc

Rishi Graham (UCSC AMS, Ph.D. 2010). Now at Monterey Bay Aquarium Research Institute

Cameron Nowzari (UCSD MAE, Ph.D. 2013), 2013 Outstanding Graduate Student Award in MAE. Now Assistant Professor at the Electrical and Computer Engineering Department, George Mason University

Michael Ouimet (UCSD MAE, Ph.D. 2014). Now Research Scientist at Unmanned Maritime Vehicles Laboratory, SPAWAR Systems Center Pacific, San Diego

Dean Richert (UCSD MAE, Ph.D. 2014), 2014 Outstanding Graduate Student Award in MAE and inaugural recipient of "Robert E. Skelton Systems and Control Dissertation Award" (academic year 2013-2014). Now postdoc at University of Calgary

David Mateos-Núñez (UCSD MAE, Ph.D. 2015). Now postdoc at Fraunhofer FHR

Ashish Cherukuri (UCSD MAE, Ph.D. 2017). 2016 Outstanding Graduate Student Award in MAE, 2016 MAE Distinguished Fellowship Award, and recipient of "Robert E. Skelton Systems and Control Dissertation Award" (academic year 2016-2017). Now postdoc at ETH Zürich

Simon Niederlaender (University of Stuttgart, Germany, M.S. 2015). Now Ph.D. student at University of Stuttgart

Aaron Ma (UCSD MAE, M.S. 2016). Now Ph.D. student at UC San Diego

Rosario Aragües (Universidad de Zaragoza, Spain, visiting Ph.D. student, Spring 08, 09)

Edgardo Chunga (Pontificia Universidad Católica del Perú, Perú, visiting Ph.D. student, Spring 09)

Rokus Ottervanger (University of Technology Eindhoven, the Netherlands, visiting M.S. student, Spring 14)

Tjerk Stegink (University of Groningen, the Netherlands, visiting Ph.D. student, Spring 17)

Ernesto Aranda (Universidad Nacional de Educación a Distancia, Spain, visiting Ph.D. student, Spring 17)

Undergraduate Students

Katie Laventall (UCSC Math, senior undergraduate thesis, 2006-2007)

Ethan Allen (Summer Training Academy for Research in the Sciences Program, Summer 2012)

Adam J Durbin (Regents Scholar Initiative Program, Fall 2012)

Jinyeong Yim (visiting student from Yonsei University, South Korea, Spring 2013)

Katherine Liu (Independent Study for Undergraduates, Winter, Spring, 2014; Undergraduate Researcher Fall 2014- Spring 2015)

Daniel Heideman (Independent Study for Undergraduates, Winter 2014-Spring 2014, Fall 2014-Winter 2015)

Peizhen Gu (UCSD-Zhejiang University Summer Research Program, Summer 2014)

Matthew Qen (Independent Study for Undergraduates, Fall 2014-Spring 2015)

Mike Liu (Independent Study for Undergraduates, Spring 2015-Spring 2016)

Gerardo Gonzalez (CAMP Summer Research Program, Summer 2015, Independent Study for Undergraduates, Fall 2015-Spring 2016, UCSD Undergraduate Research Scholarship, Summer 2016)

Jose Ramirez (Independent Study for Undergraduates, Summer 2015- Winter 2016)

Julio Martinez (Independent Study for Undergraduates, Fall 2015-Spring 2016)

Bruno Maciel (Brazil Scientific Mobility Program, Summer 2015)

Zhiye Zhang (Fall 2015)

Shiyuan Huang (Winter 2015-Summer 2016)

Aamir Rasheed (Spring 2016)

Andrew Chen (Summer 2016)

Ashim Neupane (Summer Training Academy for Research in the Sciences Program, Summer 2016)

Bryan Yang (Summer Training Academy for Research in the Sciences Program, Summer 2016)

Alexander Khoury (Independent Study for Undergraduates, Fall 2016)

Mingze An (Winter 2016)

Teaching Activities

Undergraduate Courses

- MAE140:** Linear circuits (UCSD, Winter 09, Fall 09, 11, 13-14, Winter 16). Steady-state and dynamic behavior of linear circuits, Kirchoff's laws, and design applications in engineering (4 credits)
- MAE143a:** Signals and Systems (UCSD, Winter 11). Dynamical modeling, Laplace, Fourier and z-transforms, transfer functions, frequency response, and sampling and discrete signals (4 credits)
- AMS27/L:** Mathematical Methods for Engineers (UCSC, Winter 05, Fall 05-06). Linear algebra, differential equations and Laplace transform (5+2 credits)
- MATH11B:** Calculus with Applications (UCSC, Spring 06). Integrals of functions, polynomial approximations, and Taylor series (5 credits)

Graduate Courses

- MAE207:** Game Theory for Engineers (UCSD, Spring 15). Fundamentals of game theory on modeling, analysis, and algorithms, strategic interactions and adversarial scenarios, with examples from economics, communication theory, and social networks. (4 credits). Developed ab initio.
- MAE247:** Cooperative Control of Multi-Agent Systems (UCSD, Spring 13). Cooperative control strategies for multi-agent systems, evolution models, proximity graphs, invariance principles, and coordination algorithms for rendezvous, deployment, flocking, formation, and consensus (4 credits)
- MAE281A:** Nonlinear Systems (UCSD, Spring 13). Nonlinear systems, Lyapunov stability, LaSalle's invariance theorem, perturbed systems with vanishing and nonvanishing perturbations, input-to-state stability, and averaging (4 credits)
- MAE281B:** Nonlinear Control (UCSD, Spring 08-12, Spring 14-16). Nonlinear control systems dealing with feedback stabilization and linearization, input-output stability, and passivity (4 credits)
- MAE286:** Hybrid Systems (UCSD, Fall 08, 10, Winter 14). Modeling, analysis, and design of hybrid dynamical systems, with emphasis on stability and applications (4 credits). Developed ab initio.
- MAE289A:** Mathematical Analysis for Applications (UCSD, Fall 15). Topics of mathematical analysis for real/vector-valued functions of one and/or several variables. (4 credits).
- AMS214:** Applied Dynamical Systems (UCSC, Spring 07). Dynamical systems and qualitative differential equations, stability, and applications (5 credits). Developed ab initio.
- AMS231:** Introduction to Nonlinear Control (UCSC, Spring 05, Winter 06). Nonlinear systems and control (5 credits). Developed ab initio.
- AMS236:** Motion Coordination of Robotic Networks (UCSC, Fall 06). Cooperative control, distributed algorithms and robotic networks (5 credits). Developed ab initio.

High School Courses

- COSMOS:** Robot Automation: Intelligence through Feedback Control (UCSC, Summer 05, Summer 06). Course on feedback control and robotics in the California State School for Mathematics and Science (COSMOS) program for high school students. Developed ab initio.

Courses at Summer/Winter Schools

- Invited Advanced Topics Speaker, Summer School on Modeling and Control of Mechanical Systems, Dutch Institute for Systems and Control (DISC), Netherlands, Jul 2002
- Invited Lecturer, Summer School on Geometric Mechanics and Control, International Center of Mathematical Meetings, Spain, Jun 2007
- Invited Lecturer, Cooperative multi-agent systems: distributed computation, estimation and control, Centro di Ricerca Matematica Ennio De Giorgi, Pisa, Italy, Dec 2007
- Invited Speaker, Winter School on Olfactory Localization, UCSD Institute of Nonlinear Science, Jan 2009
- Invited Speaker, Georgia Tech Summer School on Cyber-Physical Systems, Atlanta, Georgia, Jun 2010
- Invited Speaker, JAE Summer School on Mathematics, Madrid, Spain, Jul 2010
- Invited Speaker, Summer School on a Systems and Control Perspective in Human-Robot-Environment Interaction, Dutch Institute for Systems and Control (DISC), Netherlands, Jun 2016

Publications

Manuscripts listed in inverse chronological order, all available at <http://carmenere.ucsd.edu/jorge>.

Journal Papers

- (J-104) C.-Y. Chang, J. Cortés, and S. Martínez. Scheduled-asynchronous distributed algorithm for optimal power flow. *IEEE Transactions on Control of Network Systems*, 2017. Submitted
- (J-103) J. Cortés and M. Egerstedt. Coordinated control of multi-robot systems: A survey. *SICE Journal of Control, Measurement, and System Integration*, 10(6):495–503, 2017
- (J-102) P. J. S. Franks, M. Ouimet, J. Cortés, J. Garwood, and A. J. Lucas. Stokes drift of plankton in linear internal waves: Cross-shore transport of neutrally buoyant and depth-keeping organisms. *Marine Ecology Progress Series*, 2017. Submitted
- (J-101) M. J. Khojasteh, P. Tallapragada, J. Cortés, and M. Franceschetti. The value of timing information in event-triggered control. *IEEE Transactions on Automatic Control*, 2017. Submitted
- (J-100) E. Nozari, P. Tallapragada, and J. Cortés. Event-triggered stabilization of nonlinear systems with time-varying sensing and actuation delay. *IEEE Transactions on Automatic Control*, 2017. Submitted
- (J-99) P. Glotfelter, J. Cortés, and M. Egerstedt. Nonsmooth barrier functions. *IEEE Control Systems Letters*, 1(2):310–315, 2017
- (J-98) A. Cherukuri and J. Cortés. Iterative bidding in electricity markets: rationality and robustness. *IEEE Transactions on Control of Network Systems*, 2017. Submitted
- (J-97) P. Tallapragada and J. Cortés. Hierarchical-distributed optimized coordination of intersection traffic. *IEEE Transactions on Intelligent Transportation Systems*, 2017. Submitted
- (J-96) P. Tallapragada and J. Cortés. Distributed control of vehicle strings under finite-time and safety specifications. *IEEE Transactions on Control of Network Systems*, 2018. To appear. Available at <https://arxiv.org/abs/1701.03580>
- (J-95) E. Nozari, Y. Zhao, and J. Cortés. Network identification with latent nodes via auto-regressive models. *IEEE Transactions on Control of Network Systems*, 2018. To appear
- (J-94) E. Nozari, F. Pasqualetti, and J. Cortés. Time-varying actuator scheduling in complex networks. *IEEE Transactions on Control of Network Systems*, 2016. Submitted. Available at <https://arxiv.org/abs/1611.06485>
- (J-93) P. Tallapragada, M. Franceschetti, and J. Cortés. Event-triggered second-moment stabilization of linear systems under packet drops. *IEEE Transactions on Automatic Control*, 63(8), 2018. To appear
- (J-92) A. Cherukuri, E. Mallada, S. Low, and J. Cortés. The role of convexity in saddle-point dynamics: Lyapunov function and robustness. *IEEE Transactions on Automatic Control*, 63(9), 2018. To appear
- (J-91) S. K. Niederländer and J. Cortés. Distributed coordination for nonsmooth convex optimization via saddle-point dynamics. *SIAM Journal on Control and Optimization*, 2016. Submitted
- (J-90) A. Cherukuri and J. Cortés. Distributed coordination of DERs with storage for dynamic economic dispatch. *IEEE Transactions on Automatic Control*, 63(3), 2018. To appear
- (J-89) E. Nozari, P. Tallapragada, and J. Cortés. Differentially private average consensus: obstructions, trade-offs, and optimal algorithm design. *Automatica*, 81:221–231, 2017
- (J-88) E. Nozari, P. Tallapragada, and J. Cortés. Differentially private distributed convex optimization via functional perturbation. *IEEE Transactions on Control of Network Systems*, 2018. To appear
- (J-87) D. Mateos-Núñez and J. Cortés. Distributed saddle-point subgradient algorithms with Laplacian averaging. *IEEE Transactions on Automatic Control*, 62(6):2720–2735, 2017
- (J-86) P. Tallapragada, M. Franceschetti, and J. Cortés. Event-triggered control under time-varying rate and channel blackouts. *Automatica*, 2015. Submitted
- (J-85) Y. Zhao and J. Cortés. Gramian-based reachability metrics for bilinear networks. *IEEE Transactions on Control of Network Systems*, 4(3):620–631, 2017
- (J-84) A. Cherukuri, B. Ghahserifard, and J. Cortés. Saddle-point dynamics: conditions for asymptotic stability of saddle points. *SIAM Journal on Control and Optimization*, 55(1):486–511, 2017

- (J-83) A. Cherukuri, E. Mallada, and J. Cortés. Asymptotic convergence of primal-dual dynamics. *Systems & Control Letters*, 87:10–15, 2016
- (J-82) A. Cherukuri and J. Cortés. Initialization-free distributed coordination for economic dispatch under varying loads and generator commitment. *Automatica*, 74:183–193, 2016
- (J-81) C. Nowzari and J. Cortés. Distributed event-triggered coordination for average consensus on weight-balanced digraphs. *Automatica*, 68:237–244, 2016
- (J-80) D. Mateos-Núñez and J. Cortés. Noise-to-state exponentially stable distributed convex optimization on weight-balanced digraphs. *SIAM Journal on Control and Optimization*, 54(1):266–290, 2016
- (J-79) M. Ouimet and J. Cortés. Robust coordinated rendezvous of depth-actuated drifters in ocean internal waves. *Automatica*, 69:265–274, 2016
- (J-78) D. Richert and J. Cortés. Distributed bargaining in dyadic-exchange networks. *IEEE Transactions on Control of Network Systems*, 3(3):310–321, 2016
- (J-77) P. Tallapragada and J. Cortés. Event-triggered stabilization of linear systems under bounded bit rates. *IEEE Transactions on Automatic Control*, 61(6):1575–1589, 2016
- (J-76) D. Mateos-Núñez and J. Cortés. Distributed online convex optimization over jointly connected digraphs. *IEEE Transactions on Network Science and Engineering*, 1(1):23–37, 2014
- (J-75) D. Richert and J. Cortés. Distributed linear programming with event-triggered communication. *SIAM Journal on Control and Optimization*, 54(3):1769–1797, 2016
- (J-74) S. S. Kia, J. Cortés, and S. Martínez. Distributed event-triggered communication for dynamic average consensus in networked systems. *Automatica*, 59:112–119, 2015
- (J-73) S. S. Kia, J. Cortés, and S. Martínez. Distributed convex optimization via continuous-time coordination algorithms with discrete-time communication. *Automatica*, 55:254–264, 2015
- (J-72) A. Cherukuri and J. Cortés. Distributed generator coordination for initialization and anytime optimization in economic dispatch. *IEEE Transactions on Control of Network Systems*, 2(3):226–237, 2015
- (J-71) D. Richert and J. Cortés. Robust distributed linear programming. *IEEE Transactions on Automatic Control*, 60(10):2567–2582, 2015
- (J-70) S. S. Kia, J. Cortés, and S. Martínez. Dynamic average consensus under limited control authority and privacy requirements. *International Journal on Robust and Nonlinear Control*, 25(13):1941–1966, 2015
- (J-69) D. Mateos-Núñez and J. Cortés. p th moment noise-to-state stability of stochastic differential equations with persistent noise. *SIAM Journal on Control and Optimization*, 52(4):2399–2421, 2014
- (J-68) M. Ouimet and J. Cortés. Collective estimation of ocean nonlinear internal waves using robotic underwater drifters. *IEEE Access*, 1:418–427, 2013
- (J-67) C. Nowzari and J. Cortés. Team-triggered coordination for real-time control of networked cyberphysical systems. *IEEE Transactions on Automatic Control*, 61(1):34–47, 2016
- (J-66) M. Ouimet and J. Cortés. Hedonic coalition formation for optimal deployment. *Automatica*, 49(11):3234–3245, 2013
- (J-65) M. Ouimet and J. Cortés. Robust, distributed estimation of internal wave parameters via inter-drogue measurements. *IEEE Transactions on Control Systems Technology*, 22(3):980–994, 2014
- (J-64) B. Gharesifard and J. Cortés. Stealthy deception in hypergames under informational asymmetry. *IEEE Transactions on Systems, Man & Cybernetics: Systems*, 44(6):785–795, 2014
- (J-63) D. Richert and J. Cortés. Optimal leader allocation in UAV formation pairs ensuring cooperation. *Automatica*, 49(11):3189–3198, 2013
- (J-62) C. Nowzari and J. Cortés. Self-triggered optimal servicing in dynamic environments with acyclic structure. *IEEE Transactions on Automatic Control*, 58(5):1236–1249, 2013
- (J-61) B. Gharesifard and J. Cortés. Distributed convergence to Nash equilibria in two-network zero-sum games. *Automatica*, 49(6):1683–1692, 2013
- (J-60) H. Fang, R. A. de Callafon, and J. Cortés. Simultaneous input and state estimation for nonlinear systems with applications to flow field estimation. *Automatica*, 49(9):2805–2812, 2013

- (J-59) B. Gharesifard and J. Cortés. Distributed continuous-time convex optimization on weight-balanced digraphs. *IEEE Transactions on Automatic Control*, 59(3):781–786, 2014
- (J-58) C. Nowzari and J. Cortés. Self-triggered coordination of robotic networks for optimal deployment. *Automatica*, 48(6):1077–1087, 2012
- (J-57) J. Feala, J. Cortés, P. M. Duxbury, A. D. McCulloch, C. Piermarocchi, and G. Paternostro. Statistical properties and robustness of biological controller-target networks. *PLoS ONE*, 7(1):e29374, 2012
- (J-56) R. Aragüés, J. Cortés, and C. Sagüés. Distributed consensus on robot networks for dynamically merging feature-based maps. *IEEE Transactions on Robotics*, 28(4):840–854, 2012
- (J-55) B. Gharesifard and J. Cortés. Evolution of players’ misperceptions in hypergames under perfect observations. *IEEE Transactions on Automatic Control*, 57(7):1641–1656, 2012
- (J-54) J. Cortés. Deployment of an unreliable robotic sensor network for spatial estimation. *Systems & Control Letters*, 61(1):41–49, 2012
- (J-53) R. Aragüés, J. Cortés, and C. Sagüés. Distributed consensus algorithms for merging visual maps with limited communication. *Robotics and Autonomous Systems*, 59(3-4):163–180, 2011
- (J-52) R. Graham and J. Cortés. Adaptive information collection by robotic sensor networks for spatial estimation. *IEEE Transactions on Automatic Control*, 57(6):1404–1419, 2012
- (J-51) J. Cortés. Cooperative detection of areas of rapid change in spatial fields. *Automatica*, 48(4):673–681, 2012
- (J-50) B. Gharesifard and J. Cortés. Distributed strategies for generating weight-balanced and doubly stochastic digraphs. *European Journal of Control*, 18(6):539–557, 2012
- (J-49) R. Graham and J. Cortés. Cooperative adaptive sampling of random fields with partially known covariance. *International Journal on Robust and Nonlinear Control*, 22(5):504–534, 2012
- (J-48) S. Martínez, J. Cortés, and F. Bullo. A catalog of inverse-kinematics planners for underactuated systems on matrix groups. *Journal of Geometric Mechanics*, 1(4):445–460, 2009
- (J-47) M. D. Schuresko and J. Cortés. Distributed tree rearrangements for reachability and robust connectivity. *SIAM Journal on Control and Optimization*, 50(5):2588–2620, 2012
- (J-46) J. Feala, J. Cortés, P. M. Duxbury, C. Piermarocchi, A. D. McCulloch, and G. Paternostro. Systems approaches and algorithms for discovery of combinatorial therapies. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*, 2(2):181–193, 2010
- (J-45) J. Cortés. Global and robust formation-shape stabilization of relative sensing networks. *Automatica*, 45(12):2754–2762, 2009
- (J-44) J. Cortés and F. Bullo. Nonsmooth coordination and geometric optimization via distributed dynamical systems. *SIAM Review*, 51(1):163–189, 2009
- (J-43) J. Cortés. Coverage optimization and spatial load balancing by robotic sensor networks. *IEEE Transactions on Automatic Control*, 55(3):749–754, 2010
- (J-42) M. D. Schuresko and J. Cortés. Distributed motion constraints for algebraic connectivity of robotic networks. *Journal of Intelligent and Robotic Systems*, 56(1-2):99–126, 2009
- (J-41) K. Laventall and J. Cortés. Coverage control by multi-robot networks with limited-range anisotropic sensory. *International Journal of Control*, 82(6):1113–1121, 2009
- (J-40) R. Graham and J. Cortés. Asymptotic optimality of multicenter Voronoi configurations for random field estimation. *IEEE Transactions on Automatic Control*, 54(1):153–158, 2009
- (J-39) J. Cortés. Distributed Kriged Kalman filter for spatial estimation. *IEEE Transactions on Automatic Control*, 54(12):2816–2827, 2009
- (J-38) F. Benbadis, K. Obraczka, J. Cortés, and A. Brandwajn. Exploring landmark placement strategies for topology-based localization in wireless sensor networks. *EURASIP Journal on Advances in Signal Processing*, 2008. Special Issue on Signal Processing for Location Estimation and Tracking in Wireless Environments. Article ID 275658
- (J-37) J. Cortés. Discontinuous dynamical systems - a tutorial on solutions, nonsmooth analysis, and stability. *IEEE Control Systems Magazine*, 28(3):36–73, 2008

- (J-36) A. Ganguli, J. Cortés, and F. Bullo. Multirobot rendezvous with visibility sensors in nonconvex environments. *IEEE Transactions on Robotics*, 25(2):340–352, 2009
- (J-35) J. Cortés. Distributed algorithms for reaching consensus on general functions. *Automatica*, 44(3):726–737, 2008
- (J-34) C. Gao, J. Cortés, and F. Bullo. Notes on averaging over acyclic digraphs and discrete coverage control. *Automatica*, 44(8):2120–2127, 2008
- (J-33) J. Cortés and W. B. Dunbar. A high school-level course in feedback control: a Matlab-based introduction requiring only algebra and trigonometry. *IEEE Control Systems Magazine*, 27(3):79–89, 2007
- (J-32) S. Martínez, J. Cortés, and F. Bullo. Motion coordination with distributed information. *IEEE Control Systems Magazine*, 27(4):75–88, 2007
- (J-31) J. Cortés, M. de León, J. C. Marrero, and E. Martínez. Nonholonomic Lagrangian systems on Lie algebroids. *Discrete and Continuous Dynamical Systems - Series A*, 24(2):213–271, 2009
- (J-30) J. Cortés, M. de León, J. C. Marrero, D. Martín de Diego, and E. Martínez. A survey on Lagrangian mechanics and control on Lie algebroids and Lie groupoids. *International Journal of Geometric Methods in Modern Physics*, 3(3):509–558, 2006
- (J-29) J. Cortés. Finite-time convergent gradient flows with applications to network consensus. *Automatica*, 42(11):1993–2000, 2006
- (J-28) S. Martínez, F. Bullo, J. Cortés, and E. Frazzoli. On synchronous robotic networks – Part II: Time complexity of rendezvous and deployment algorithms. *IEEE Transactions on Automatic Control*, 52(12):2214–2226, 2007
- (J-27) S. Martínez, F. Bullo, J. Cortés, and E. Frazzoli. On synchronous robotic networks – Part I: Models, tasks and complexity. *IEEE Transactions on Automatic Control*, 52(12):2199–2213, 2007
- (J-26) A. Ganguli, J. Cortés, and F. Bullo. Maximizing visibility in nonconvex polygons: Nonsmooth analysis and gradient algorithm design. *SIAM Journal on Control and Optimization*, 45(5):1657–1679, 2006
- (J-25) J. Cortés, S. Martínez, and F. Bullo. Robust rendezvous for mobile autonomous agents via proximity graphs in arbitrary dimensions. *IEEE Transactions on Automatic Control*, 51(8):1289–1298, 2006
- (J-24) J. Cortés, S. Martínez, and F. Bullo. Spatially-distributed coverage optimization and control with limited-range interactions. *ESAIM. Control, Optimisation & Calculus of Variations*, 11(4):691–719, 2005
- (J-23) J. Cortés and A. Vinogradov. Hamiltonian theory of constrained impulsive motion. *Journal of Mathematical Physics*, 47:042905 (1–30), 2006
- (J-22) J. Cortés and E. Martínez. Mechanical control systems on Lie algebroids. *IMA Journal on Mathematical Control and Information*, 21(4):457–492, 2004
- (J-21) J. Cortés and F. Bullo. Coordination and geometric optimization via distributed dynamical systems. *SIAM Journal on Control and Optimization*, 44(5):1543–1574, 2005
- (J-20) J. Cortés, A. J. van der Schaft, and P. E. Crouch. Characterization of gradient control systems. *SIAM Journal on Control and Optimization*, 44(4):1192–1214, 2005
- (J-19) J. Cortés, S. Martínez, T. Karatas, and F. Bullo. Coverage control for mobile sensing networks. *IEEE Transactions on Robotics and Automation*, 20(2):243–255, 2004
- (J-18) M de León, J. Cortés, D. Martín de Diego, and S. Martínez. General symmetries in optimal control. *Reports on Mathematical Physics*, 53(1):55–78, 2004
- (J-17) J. Cortés. Energy conserving nonholonomic integrators. *Discrete and Continuous Dynamical Systems - Series A*, pages 189–199, 2003. Added volume
- (J-16) J. Cortés and S. Martínez. The consistency problem in optimal control: the degenerate case. *Reports on Mathematical Physics*, 51(2/3):171–186, 2003
- (J-15) S. Martínez, J. Cortés, and F. Bullo. Analysis and design of oscillatory control systems. *IEEE Transactions on Automatic Control*, 48(7):1164–1177, 2003
- (J-14) J. Cortés and S. Martínez. Configuration controllability for mechanical systems underactuated by one control. *SIAM Journal on Control and Optimization*, 41(6):1901–1921, 2003

- (J-13) J. Cortés, M de León, D. Martín de Diego, and S. Martínez. Geometric description of vakonomic and nonholonomic dynamics, comparison of solutions. *SIAM Journal on Control and Optimization*, 41(5):1389–1412, 2003
- (J-12) S. Martínez and J. Cortés. Motion control algorithms for simple mechanical systems with symmetry. *Acta Applicandae Mathematicae*, 76(3):221–264, 2003
- (J-11) F. Cantrijn and J. Cortés. Cosymplectic reduction of constrained systems with symmetry. *Reports on Mathematical Physics*, 49(2-3):167–182, 2002
- (J-10) J. Cortés, S. Martínez, and F. Bullo. On nonlinear controllability and series expansions for Lagrangian systems with dissipative forces. *IEEE Transactions on Automatic Control*, 47(8):1396–1401, 2002
- (J-9) J. Cortés, S. Martínez, and F. Cantrijn. Skinner-Rusk approach to time-dependent mechanics. *Phys. Lett. A*, 300(2-3):250–258, 2002
- (J-8) J. Cortés, S. Martínez, J. P. Ostrowski, and H. Zhang. Simple mechanical control systems with constraints and symmetry. *SIAM Journal on Control and Optimization*, 41(3):851–874, 2002
- (J-7) F. Cantrijn, J. Cortés, M. de León, and D. Martín de Diego. On the geometry of generalized Chaplygin systems. *Mathematical Proceedings of the Cambridge Philosophical Society*, 132:323–351, 2002
- (J-6) J. Cortés, S. Martínez, J. P. Ostrowski, and K. A. McIsaac. Optimal gaits for dynamic robotic locomotion. *International Journal of Robotics Research*, 20(9):707–728, 2001
- (J-5) J. Cortés and S. Martínez. Non-holonomic integrators. *Nonlinearity*, 14(5):1365–1392, 2001
- (J-4) S. Martínez, J. Cortés, and M. de León. Symmetries in vakonomic dynamics: applications to optimal control. *Journal of Geometry and Physics*, 38(3-4):343–365, 2001
- (J-3) J. Cortés, M. de León, D. Martín de Diego, and S. Martínez. Mechanical systems subjected to generalized non-holonomic constraints. *Royal Society of London. Proceedings Series A: Mathematical, Physical and Engineering Sciences*, 457(2007):651–670, 2001
- (J-2) S. Martínez, J. Cortés, and M. de León. The geometrical theory of constraints applied to the dynamics of vakonomic mechanical systems: the vakonomic bracket. *Journal of Mathematical Physics*, 41(4):2090–2120, 2000
- (J-1) J. Cortés and M. de León. Reduction and reconstruction of the dynamics of nonholonomic systems. *Journal of Physics A: Mathematical and General*, 32(49):8615–8645, 1999

Books

- (B-3) F. Bullo, J. Cortés, J. Hespanha, and P. Tabuada, editors. *Proceedings of the 3rd IFAC Workshop on Distributed Estimation and Control in Networked Systems*, volume 3. IFAC PapersOnLine, 2012. Electronically available at <http://www.ifac-papersonline.net>
- (B-2) F. Bullo, J. Cortés, and S. Martínez. *Distributed Control of Robotic Networks*. Applied Mathematics Series. Princeton University Press, 2009. Electronically available at <http://coordinationbook.info>
- (B-1) J. Cortés. *Geometric, Control and Numerical Aspects of Nonholonomic Systems*, volume 1793 of *Lecture Notes in Mathematics*. Springer, New York, 2002

Book Chapters

- (BC-16) H. Fang, R. A. de Callafon, and J. Cortés. Estimation-based ocean flow field reconstruction using profiling floats. In *Offshore Marine Mechatronics*. CRC Press, Boca Raton, FL, 2018
- (BC-15) C. Nowzari, J. Cortés, and G. J. Pappas. Event-triggered communication and control for multi-agent average consensus. In Y. Wang, E. Garcia, D. Casbeer, and F. Zhang, editors, *Cooperative Control of Multi-Agent Systems: Theory and Applications*. Wiley, New York, 2016
- (BC-14) J. Cortés and S. Martínez. Distributed line search for multi-agent convex optimization. In M. K. Camlibel, A. Julius, R. Pasumathy, and J. M. A. Scherpen, editors, *Mathematical Control Theory I. Nonlinear and Hybrid Control Systems*, volume 461 of *Lecture Notes in Control and Information Sciences*, pages 95–110. Springer, New York, 2015

- (BC-13) C. Nowzari and J. Cortés. Self-triggered and team-triggered control of networked cyber-physical systems. In M. Miskowicz, editor, *Event-Based Control and Signal Processing*, Embedded Systems, pages 203–220. CRC Press, Boca Raton, FL, 2015
- (BC-12) J. Cortés. Control of networked systems, overview. In J. Baillieul and T. Samad, editors, *Encyclopedia of Systems and Control*. Springer, New York, 2015
- (BC-11) C. Nowzari and J. Cortés. Robust team-triggered coordination of networked cyber-physical systems. In D. C. Tarraf, editor, *Control of Cyber-Physical Systems*, volume 449 of *Lecture Notes in Control and Information Sciences*, pages 317–336. Springer, New York, 2013
- (BC-10) M. D. Schuresko and J. Cortés. Distributed tree rearrangements for reachability and robust connectivity. In R. Majumdar and P. Tabuada, editors, *International Conference on Hybrid Systems: Computation and Control*, volume 5469 of *Lecture Notes in Computer Science*, pages 470–474, New York, 2009. Springer
- (BC-9) J. Cortés. Distributed wombling by robotic sensor networks. In R. Majumdar and P. Tabuada, editors, *International Conference on Hybrid Systems: Computation and Control*, volume 5469 of *Lecture Notes in Computer Science*, pages 120–134, New York, 2009. Springer
- (BC-8) F. Bullo, J. Cortés, and S. Martínez. Distributed algorithms for robotic networks. In R. A. Meyers, editor, *Encyclopedia of Complexity and System Science*. Springer, New York, 2009. Entry 00168
- (BC-7) A. Ganguli, J. Cortés, and F. Bullo. Distributed coverage of nonconvex environments. In V. Saligrama, editor, *Networked Sensing Information and Control (Proceedings of the NSF Workshop on Future Directions in Systems Research for Networked Sensing, May 2006, Boston, MA)*, Lecture Notes in Control and Information Sciences, pages 289–305. Springer, 2007
- (BC-6) S. Martínez and J. Cortés. Matemáticas, Control y Robótica. In M. de León, J. L. González, L. A. Ibort, and E. Zuazua, editors, *Matemáticas en la Frontera*, pages 116–123. Comunidad de Madrid, Consejería de Educación, Madrid, Spain, 2007
- (BC-5) J. Cortés. Motion coordination algorithms resulting from classical geometric optimization problems. In K. Tas, D. Krupka, D. Baleanu, and O. Krupkova, editors, *Proceedings of the International Workshop on Global Analysis*, volume 729 of *AIP Conference Proceedings Series*, pages 54–68. American Institute of Physics, New York, 2004
- (BC-4) F. Bullo and J. Cortés. Adaptive and distributed coordination algorithms for mobile sensing networks. In V. Kumar, N. E. Leonard, and A. S. Morse, editors, *Cooperative control. (Proceedings of the 2003 Block Island Workshop on Cooperative Control)*, volume 309 of *Lecture Notes in Control and Information Sciences*, pages 43–62. Springer, New York, 2004
- (BC-3) S. Martínez, J. Cortés, and F. Bullo. Motion planning and control problems for underactuated robots. In A. Bicchi, H. Christensen, and D. Prattichizzo, editors, *Control Problems in Robotics*, volume 4 of *Springer Tracts in Advanced Robotics*, pages 59–74. Springer, New York, 2003
- (BC-2) F. Bullo, J. Cortés, A.D. Lewis, and S. Martínez. Vector-valued quadratic forms in control theory. In V. Blondel and A. Megretski, editors, *Unsolved Problems in Mathematical Systems and Control Theory*, pages 315–320. Princeton University Press, Princeton, 2004
- (BC-1) M. de León, J. Cortés, D. Martín de Diego, and S. Martínez. An introduction to mechanics with symmetry. In *Recent advances in Lie theory (Vigo, 2000)*, volume 25 of *Res. Exp. Math.*, pages 305–332. Heldermann, Lemgo, 2002

Conference Proceedings

- (C-126) T. Stegink, A. Cherukuri, C. De Persis, A. J. van der Schaft, and J. Cortés. Stable interconnection of continuous-time price-bidding mechanisms with power network dynamics. In *Power Systems Computation Conference*, Dublin, Ireland, June 2018. Submitted
- (C-125) K. Lee, S. Martínez, J. Cortés, R. H. Chen, and M. B. Milam. Receding-horizon multi-objective optimization for disaster response. In *American Control Conference*, Milwaukee, WI, May 2018. Submitted
- (C-124) P. Srivastava, C.-Y. Chang, and J. Cortés. Participation of microgrids in frequency regulation markets. In *American Control Conference*, Milwaukee, WI, May 2018. Submitted

- (C-123) T. Stegink, A. Cherukuri, C. De Persis, A. J. van der Schaft, and J. Cortés. Integrating iterative bidding in electricity markets and frequency regulation. In *American Control Conference*, Milwaukee, WI, May 2018. Submitted
- (C-122) E. Nozari and J. Cortés. Stability analysis of complex networks with linear-threshold rate dynamics. In *American Control Conference*, Milwaukee, WI, May 2018. Submitted
- (C-121) A. Cherukuri and J. Cortés. Data-driven distributed optimization using Wasserstein ambiguity sets. In *Allerton Conf. on Communications, Control and Computing*, Monticello, IL, 2017. To appear
- (C-120) C.-Y. Chang, S. Martínez, and J. Cortés. Convex relaxation for mixed-integer optimal power flow problems. In *Allerton Conf. on Communications, Control and Computing*, Monticello, IL, 2017. To appear
- (C-119) A. Ma, M. Ouimet, and J. Cortés. Dynamic domain reduction for multi-agent planning. In *International Symposium on Multi-Robot and Multi-Agent Systems*, Los Angeles, CA, 2017. To appear
- (C-118) M. J. Khojasteh, P. Tallapragada, J. Cortés, and M. Franceschetti. Time-triggering versus event-triggering control over communication channels. In *IEEE Conf. on Decision and Control*, Melbourne, Australia, December 2017. To appear
- (C-117) P. Ong and J. Cortés. Event-triggered interactive gradient descent for real-time multi-objective optimization. In *IEEE Conf. on Decision and Control*, Melbourne, Australia, December 2017. To appear
- (C-116) C.-Y. Chang, S. Martínez, and J. Cortés. Grid-connected microgrid participation in frequency-regulation markets via hierarchical coordination. In *IEEE Conf. on Decision and Control*, Melbourne, Australia, December 2017. To appear
- (C-115) P. Glotfelter, J. Cortés, and M. Egerstedt. Nonsmooth barrier functions. In *IEEE Conf. on Decision and Control*, Melbourne, Australia, December 2017. To appear
- (C-114) C.-Y. Chang, J. Cortés, and S. Martínez. A scheduled-asynchronous distributed optimization algorithm for the optimal power flow problem. In *American Control Conference*, pages 3968–3973, Seattle, WA, May 2017
- (C-113) Y. Zhang and J. Cortés. Transient-state feasibility set approximation of power networks against disturbances of unknown amplitude. In *American Control Conference*, pages 2767–2772, Seattle, WA, May 2017
- (C-112) E. Nozari, F. Pasqualetti, and J. Cortés. Time-invariant versus time-varying actuator scheduling in complex networks. In *American Control Conference*, pages 4995–5000, Seattle, WA, May 2017
- (C-111) A. Cherukuri, A. D. Domínguez-García, and J. Cortés. Distributed coordination of power generators for a linearized optimal power flow problem. In *American Control Conference*, pages 3962–3967, Seattle, WA, May 2017
- (C-110) A. Cherukuri and J. Cortés. Decentralized Nash equilibrium seeking by strategic generators for DC optimal power flow. In *Annual Conference on Information Systems and Sciences*, Baltimore, MD, March 2017. Electronic proceedings
- (C-109) M. J. Khojasteh, P. Tallapragada, J. Cortés, and M. Franceschetti. The value of timing information in event-triggered control: the scalar case. In *Allerton Conf. on Communications, Control and Computing*, pages 1165–1172, Monticello, IL, September 2016
- (C-108) P. Tallapragada, M. Franceschetti, and J. Cortés. Event-triggered stabilization of scalar linear systems under packet drops. In *Allerton Conf. on Communications, Control and Computing*, pages 1173–1180, Monticello, IL, September 2016
- (C-107) A. Cherukuri, E. Mallada, S. Low, and J. Cortés. The role of strong convexity-concavity in the convergence and robustness of the saddle-point dynamics. In *Allerton Conf. on Communications, Control and Computing*, pages 504–510, Monticello, IL, September 2016
- (C-106) A. Cherukuri and J. Cortés. Distributed algorithms for convex network optimization under non-sparse equality constraints. In *Allerton Conf. on Communications, Control and Computing*, pages 452–459, Monticello, IL, September 2016
- (C-105) A. Ma and J. Cortés. Visibility-based distributed deployment of robotic teams in polyhedral terrains. In *ASME Dynamic Systems and Control Conference*, Minneapolis, MN, October 2016. DSCC2016-9820
- (C-104) J. Cortés, G. E. Dullerud, S. Han, J. Le Ny, S. Mitra, and G. J. Pappas. Differential privacy in control and network systems. In *IEEE Conf. on Decision and Control*, pages 4252–4272, Las Vegas, NV, 2016

- (C-103) S. K. Niederländer, F. Allgöwer, and J. Cortés. Exponentially fast distributed coordination for nonsmooth convex optimization. In *IEEE Conf. on Decision and Control*, pages 1036–1041, Las Vegas, NV, 2016
- (C-102) Y. Zhao, F. Pasqualetti, and J. Cortés. Scheduling of control nodes for improved network controllability. In *IEEE Conf. on Decision and Control*, pages 1859–1864, Las Vegas, NV, 2016
- (C-101) E. Nozari, P. Tallapragada, and J. Cortés. Event-triggered control for nonlinear systems with time-varying input delay. In *IEEE Conf. on Decision and Control*, pages 495–500, Las Vegas, NV, 2016
- (C-100) Y. Zhang and J. Cortés. Quantifying the robustness of power networks against initial failure. In *European Control Conference*, pages 2072–2077, Aalborg, Denmark, July 2016
- (C-99) E. Nozari, P. Tallapragada, and J. Cortés. Differentially private distributed convex optimization via objective perturbation. In *American Control Conference*, pages 2061–2066, Boston, MA, July 2016
- (C-98) A. Cherukuri and J. Cortés. Decentralized Nash equilibrium learning by strategic generators for economic dispatch. In *American Control Conference*, pages 1082–1087, Boston, MA, July 2016
- (C-97) Y. Zhao and J. Cortés. Identification of linear networks with latent nodes. In *American Control Conference*, pages 173–178, Boston, MA, July 2016
- (C-96) P. Tallapragada, M. Franceschetti, and J. Cortés. Event-triggered stabilization of linear systems under channel blackouts. In *Allerton Conf. on Communications, Control and Computing*, pages 604–611, Monticello, IL, October 2015
- (C-95) P. Tallapragada and J. Cortés. Coordinated intersection traffic management. *IFAC-PapersOnLine*, 48(22):233–239, 2015. *IFAC Workshop on Distributed Estimation and Control in Networked Systems*, Philadelphia, PA
- (C-94) D. Mateos-Núñez and J. Cortés. Distributed optimization for multi-task learning via nuclear-norm approximation. *IFAC-PapersOnLine*, 48(22):64–69, 2015. *IFAC Workshop on Distributed Estimation and Control in Networked Systems*, Philadelphia, PA
- (C-93) E. Nozari, P. Tallapragada, and J. Cortés. Differentially private average consensus with optimal noise selection. *IFAC-PapersOnLine*, 48(22):203–208, 2015. *IFAC Workshop on Distributed Estimation and Control in Networked Systems*, Philadelphia, PA
- (C-92) M. Ouimet, J. Cortés, and S. Martínez. Network integrity via coordinated motion of stratospheric vehicles. In *IEEE Conf. on Decision and Control*, pages 215–220, Osaka, Japan, 2015
- (C-91) Y. Zhao and J. Cortés. Reachability metrics for bilinear complex networks. In *IEEE Conf. on Decision and Control*, pages 4788–4793, Osaka, Japan, 2015
- (C-90) Y. Zhao, V. Gupta, and J. Cortés. The effect of delayed side information on fundamental limitations of disturbance attenuation. In *IEEE Conf. on Decision and Control*, pages 1878–1883, Osaka, Japan, 2015
- (C-89) S. K. Niederländer and J. Cortés. Distributed coordination for separable convex optimization with coupling constraints. In *IEEE Conf. on Decision and Control*, pages 694–699, Osaka, Japan, 2015
- (C-88) D. Mateos-Núñez and J. Cortés. Distributed subgradient methods for saddle-point problems. In *IEEE Conf. on Decision and Control*, pages 5462–5467, Osaka, Japan, 2015
- (C-87) A. Cherukuri and J. Cortés. Distributed dynamic economic dispatch of power generators with storage. In *IEEE Conf. on Decision and Control*, pages 2365–2370, Osaka, Japan, 2015
- (C-86) A. Cherukuri, E. Mallada, and J. Cortés. Convergence of Caratheodory solutions for primal-dual dynamics in constrained concave optimization. *SIAM Conference on Control and Its Applications*, pages 290–296, July 2015
- (C-85) A. Cherukuri and J. Cortés. Asymptotic stability of saddle points under the saddle-point dynamics. In *American Control Conference*, pages 2020–2025, Chicago, IL, July 2015
- (C-84) C. Nowzari, J. Cortés, and G. J. Pappas. Team-triggered coordination of robotic networks for optimal deployment. In *American Control Conference*, pages 5744–5751, Chicago, IL, July 2015
- (C-83) A. Cherukuri and J. Cortés. Distributed coordination for economic dispatch with varying load and generator commitment. In *Allerton Conf. on Communications, Control and Computing*, pages 475–482, Monticello, IL, October 2014
- (C-82) P. Tallapragada and J. Cortés. Event-triggered control with bounded data rate. In *IEEE Conf. on Decision and Control*, pages 1989–1994, Los Angeles, CA, 2014

- (C-81) D. Richert and J. Cortés. Distributed event-triggered optimization for linear programming. In *IEEE Conf. on Decision and Control*, pages 2007–2012, Los Angeles, CA, 2014
- (C-80) S. S. Kia, J. Cortés, and S. Martínez. Dynamic average consensus with distributed event-triggered communication. In *IEEE Conf. on Decision and Control*, pages 890–895, Los Angeles, CA, 2014
- (C-79) M. Ouimet and J. Cortés. Coordinated rendezvous of underwater drifters in ocean internal waves. In *IEEE Conf. on Decision and Control*, pages 6099–6104, Los Angeles, CA, 2014
- (C-78) D. Mateos-Núñez and J. Cortés. Distributed online second-order dynamics for convex optimization over switching connected graphs. In *Mathematical Theory of Networks and Systems*, pages 15–22, Groningen, The Netherlands, 2014
- (C-77) C. Nowzari and J. Cortés. Zeno-free, distributed event-triggered communication and control for multi-agent average consensus. In *American Control Conference*, pages 2148–2153, Portland, OR, 2014
- (C-76) S. S. Kia, J. Cortés, and S. Martínez. Periodic and event-triggered communication for distributed continuous-time convex optimization. In *American Control Conference*, pages 5010–5015, Portland, OR, 2014
- (C-75) A. Cherukuri, S. Martínez, and J. Cortés. Distributed, anytime optimization in power-generator networks for economic dispatch. In *American Control Conference*, pages 172–177, Portland, OR, 2014
- (C-74) M. Ouimet and J. Cortés. Robust estimation and aggregation of ocean internal wave parameters using Lagrangian drifters. In *American Control Conference*, pages 5121–5126, Portland, OR, 2014
- (C-73) D. Mateos-Núñez and J. Cortés. Noise-to-state stable distributed convex optimization on weight-balanced digraphs. In *IEEE Conf. on Decision and Control*, pages 2781–2786, Florence, Italy, 2013
- (C-72) J. Cortés and S. Martínez. Distributed line search via dynamic convex combinations. In *IEEE Conf. on Decision and Control*, pages 2346–2351, Florence, Italy, 2013
- (C-71) D. Richert and J. Cortés. Integral input-to-state stable saddle-point dynamics for distributed linear programming. In *IEEE Conf. on Decision and Control*, pages 7480–7485, Florence, Italy, 2013
- (C-70) S. S. Kia, J. Cortés, and S. Martínez. Saturation-tolerant average consensus with controllable rates of convergence. In *SIAM Conference on Control and Its Applications*, pages 121–128, San Diego, CA, July 2013
- (C-69) R. Aragüés, J. Cortés, and C. Sagüés. Distributed map merging with consensus on common information. In *European Control Conference*, pages 736–741, Zürich, Switzerland, July 2013
- (C-68) S. S. Kia, J. Cortés, and S. Martínez. Singularly perturbed algorithms for dynamic average consensus. In *European Control Conference*, pages 1758–1763, Zürich, Switzerland, July 2013
- (C-67) C. Nowzari and J. Cortés. Team-triggered coordination of networked systems. In *American Control Conference*, pages 3827–3832, Washington, D.C., June 2013
- (C-66) D. Mateos-Núñez and J. Cortés. Stability of stochastic differential equations with additive persistent noise. In *American Control Conference*, pages 5447–5452, Washington, D.C., June 2013
- (C-65) D. Richert and J. Cortés. Distributed linear programming and bargaining in exchange networks. In *American Control Conference*, pages 4624–4629, Washington, D.C., 2013
- (C-64) M. Ouimet and J. Cortés. Distributed estimation of internal wave parameters via inter-drogue distances. In *IEEE Conf. on Decision and Control*, pages 2433–2438, Maui, Hawaii, 2012
- (C-63) B. Gharesifard and J. Cortés. Distributed convergence to Nash equilibria by adversarial networks with directed topologies. In *IEEE Conf. on Decision and Control*, pages 5786–5791, Maui, Hawaii, 2012
- (C-62) D. Richert and J. Cortés. Optimal leader allocation in UAV formation pairs under costly switching. In *IEEE Conf. on Decision and Control*, pages 831–836, Maui, Hawaii, 2012
- (C-61) C. Nowzari and J. Cortés. Robust optimal investment policies for servicing targets in acyclic digraphs. In *IEEE Conf. on Decision and Control*, pages 136–141, Maui, Hawaii, 2012
- (C-60) B. Gharesifard and J. Cortés. Continuous-time distributed convex optimization on weight-balanced digraphs. In *IEEE Conf. on Decision and Control*, pages 7451–7456, Maui, Hawaii, 2012
- (C-59) B. Gharesifard and J. Cortés. Exploration of misperceptions in hypergames. In *Allerton Conf. on Communications, Control and Computing*, pages 1565–1570, Monticello, IL, September 2011
- (C-58) B. Gharesifard and J. Cortés. Distributed convergence to Nash equilibria by adversarial networks with undirected topologies. In *American Control Conference*, pages 5881–5886, Montréal, Canada, 2012

- (C-57) D. Richert and J. Cortés. Optimal leader allocation in UAV formation pairs under no-cost switching. In *American Control Conference*, pages 3297–3302, Montréal, Canada, 2012
- (C-56) M. Ouimet and J. Cortés. Coalition formation and motion coordination for optimal deployment. In *IEEE Conf. on Decision and Control and European Control Conference*, pages 6882–6887, Orlando, Florida, 2011
- (C-55) B. Ghahesifard and J. Cortés. Stealthy strategies for deception in hypergames with asymmetric information. In *IEEE Conf. on Decision and Control and European Control Conference*, pages 5762–5767, Orlando, Florida, 2011
- (C-54) C. Nowzari and J. Cortés. Self-triggered coordination of robotic networks for optimal deployment. In *American Control Conference*, pages 1039–1044, San Francisco, CA, 2011
- (C-53) B. Ghahesifard and J. Cortés. Learning of equilibria and misperceptions in hypergames with perfect observations. In *American Control Conference*, pages 4045–4050, San Francisco, CA, 2011
- (C-52) B. Ghahesifard and J. Cortés. Evolution of the perception about the opponent in hypergames. In *IEEE Conf. on Decision and Control*, pages 1076–1081, Atlanta, Georgia, 2010
- (C-51) J. Cortés. Deployment of an unreliable robotic sensor network for spatial estimation. In *IEEE Conf. on Decision and Control*, pages 376–381, Atlanta, Georgia, 2010
- (C-50) R. Graham and J. Cortés. Generalized multicircumcenter trajectories for optimal design under near-independence. In *IEEE Conf. on Decision and Control*, pages 5499–5504, Atlanta, Georgia, 2010
- (C-49) Y. Han, R. A. de Callafon, J. Cortés, and J. Jaffe. Dynamic modeling and pneumatic switching control of a submersible drogue. In *International Conference on Informatics in Control, Automation and Robotics*, volume 2, pages 89–97, Funchal, Madeira, Portugal, June 2010
- (C-48) R. Aragüés, J. Cortés, and C. Sagüés. Dynamic consensus for merging visual maps under limited communications. In *IEEE Int. Conf. on Robotics and Automation*, Anchorage, AL, May 2010. 3032-3037
- (C-47) B. Ghahesifard and J. Cortés. When does a digraph admit a doubly stochastic adjacency matrix? In *American Control Conference*, pages 2440–2445, Baltimore, MD, June 2010
- (C-46) R. Graham and J. Cortés. Spatial statistics and distributed estimation by robotic sensor networks. In *American Control Conference*, pages 2422–2427, Baltimore, MD, June 2010
- (C-45) B. Ghahesifard and J. Cortés. Distributed strategies for making a digraph weight-balanced. In *Allerton Conf. on Communications, Control and Computing*, pages 771–777, Monticello, IL, October 2009
- (C-44) H. Gao and J. Cortés. Spatial detection of areas of abrupt change by robotic networks. In *ASME Dynamic Systems and Control Conference*, Hollywood, CA, October 2009. DSCC2009-2760
- (C-43) R. Graham and J. Cortés. Cooperative adaptive sampling via approximate entropy maximization. In *IEEE Conf. on Decision and Control*, pages 7055–7060, Shanghai, China, December 2009
- (C-42) R. Aragüés, J. Cortés, and C. Sagüés. Motion control strategies for improved multi robot perception. In *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*, pages 1065–1070, St. Louis, MO, October 2009
- (C-41) R. Graham and J. Cortés. Distributed sampling of random fields with unknown covariance. In *American Control Conference*, pages 4543–4548, St. Louis, MO, 2009
- (C-40) J. Cortés. Global formation-shape stabilization of relative sensing networks. In *American Control Conference*, pages 1460–1465, St. Louis, MO, 2009
- (C-39) R. Aragüés, J. Cortés, and C. Sagüés. Distributed map merging in a robotic network. In *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*, pages 104–110, Nice, France, September 2008. Workshop on Network Robot Systems: human concepts of space and activity, integration, and applications
- (C-38) M. D. Schuresko and J. Cortés. Distributed motion constraints for algebraic connectivity of robotic networks. In *IEEE Conf. on Decision and Control*, pages 5482–5487, Cancun, Mexico, December 2008
- (C-37) R. Graham and J. Cortés. A cooperative deployment strategy for optimal sampling in spatiotemporal estimation. In *IEEE Conf. on Decision and Control*, pages 2432–2437, Cancun, Mexico, December 2008
- (C-36) J. Cortés. Area-constrained coverage optimization by robotic sensor networks. In *IEEE Conf. on Decision and Control*, pages 1018–1023, Cancun, Mexico, December 2008
- (C-35) K. Laventall and J. Cortés. Coverage control by robotic networks with limited-range anisotropic sensory. In *American Control Conference*, pages 2666–2671, Seattle, WA, 2008

- (C-34) R. Graham and J. Cortés. Asymptotic optimality of multicenter Voronoi configurations for random field estimation. In *IEEE Conf. on Decision and Control*, pages 3127–3132, New Orleans, LA, 2007
- (C-33) M. D. Schuresko and J. Cortés. Safe graph rearrangements for distributed connectivity of robotic networks. In *IEEE Conf. on Decision and Control*, pages 4602–4607, New Orleans, LA, 2007
- (C-32) J. Cortés. Distributed gradient ascent of random fields by robotic sensor networks. In *IEEE Conf. on Decision and Control*, pages 3120–3126, New Orleans, LA, 2007
- (C-31) F. Benbadis, K. Obraczka, J. Cortés, and A. Brandwajn. Exploring landmark placement strategies for self-localization in wireless sensor networks. In *18th Annual International Symposium on Personal, Indoor and Mobile Radio Communications*, Athens, Greece, 2007. Electronic proceedings: paper id #834
- (C-30) A. Ganguli, J. Cortés, and F. Bullo. Visibility-based multi-agent deployment in orthogonal environments. In *American Control Conference*, pages 3426–3431, New York, July 2007
- (C-29) J. Cortés. Analysis and design of distributed algorithms for χ -consensus. In *IEEE Conf. on Decision and Control*, pages 3363–3368, San Diego, CA, December 2006
- (C-28) M. D. Schuresko and J. Cortés. Correctness analysis and optimality bounds of multi-spacecraft formation initialization algorithms. In *IEEE Conf. on Decision and Control*, pages 5974–5979, San Diego, CA, December 2006
- (C-27) C. Gao, F. Bullo, J. Cortés, and A. Jadbabaie. Notes on averaging over acyclic digraphs and discrete coverage control. In *IEEE Conf. on Decision and Control*, pages 4651–4656, San Diego, CA, December 2006
- (C-26) W. B. Dunbar and J. Cortés. A crash course in feedback control - a MATLAB-based introduction with one prerequisite: high school algebra. In *IEEE Conf. on Decision and Control*, pages 3900–3905, San Diego, CA, December 2006
- (C-25) J. Cortés. Characterizing robust coordination algorithms via proximity graphs and set-valued maps. In *American Control Conference*, pages 8–13, Minneapolis, MN, June 2006
- (C-24) A. Ganguli, J. Cortés, and F. Bullo. Distributed deployment of asynchronous guards in art galleries. In *American Control Conference*, pages 1416–1421, Minneapolis, MN, June 2006
- (C-23) A. Ganguli, S. Susca, S. Martínez, F. Bullo, and J. Cortés. On collective motion in sensor networks: Sample problems and distributed algorithms. In *IEEE Conf. on Decision and Control and European Control Conference*, pages 4239–4244, Seville, Spain, December 2005
- (C-22) J. Cortés. Achieving coordination tasks in finite time via nonsmooth gradient flows. In *IEEE Conf. on Decision and Control*, pages 6376–6381, Seville, Spain, December 2005
- (C-21) S. Martínez, F. Bullo, J. Cortés, and E. Frazzoli. On synchronous robotic networks – Part II: Time complexity of rendezvous and deployment algorithms. In *IEEE Conf. on Decision and Control*, pages 8313–8318, Seville, Spain, December 2005
- (C-20) S. Martínez, F. Bullo, J. Cortés, and E. Frazzoli. On synchronous robotic networks – Part I: Models, tasks and complexity notions. In *IEEE Conf. on Decision and Control*, pages 2847–2852, Seville, Spain, December 2005
- (C-19) A. Ganguli, J. Cortés, and F. Bullo. On rendezvous for visually-guided agents in a nonconvex polygon. In *IEEE Conf. on Decision and Control and European Control Conference*, pages 5686–5691, Seville, Spain, December 2005
- (C-18) S. Martínez, J. Cortés, and F. Bullo. On robust rendezvous for mobile autonomous agents. *IFAC Proceedings Volumes*, 38(1):115–120, 2005. *IFAC World Congress*, Prague, Czech Republic
- (C-17) A. Ganguli, J. Cortés, and F. Bullo. Maximizing visibility in nonconvex polygons: nonsmooth analysis and gradient algorithm design. In *American Control Conference*, pages 792–797, Portland, OR, 2005
- (C-16) J. Cortés, S. Martínez, and F. Bullo. Analysis and design tools for distributed motion coordination. In *American Control Conference*, pages 1680–1685, Portland, OR, 2005
- (C-15) J. Cortés, S. Martínez, and F. Bullo. Coordinated deployment of mobile sensing networks with limited-range interactions. In *IEEE Conf. on Decision and Control*, pages 1944–1949, Paradise Island, Bahamas, December 2004

- (C-14) C. Robinson, D. Block, S. Brennan, F. Bullo, and J. Cortés. Nonsmooth analysis and sonar-based implementation of distributed coordination algorithms. In *IEEE Int. Conf. on Robotics and Automation*, pages 3000–3005, New Orleans, LA, USA, May 2004
- (C-13) S. Martínez, J. Cortés, and F. Bullo. A catalog of inverse-kinematics planners for underactuated systems on matrix Lie groups. In *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*, pages 625–630, Las Vegas, NV, October 2003
- (C-12) J. Cortés and F. Bullo. From geometric optimization and nonsmooth analysis to distributed coordination algorithms. In *IEEE Conf. on Decision and Control*, pages 3274–3280, Maui, Hawaii, USA, December 2003
- (C-11) J. Cortés, A. J. van der Schaft, and P. E. Crouch. Gradient realization of nonlinear control systems. In A. J. van der Schaft and A. Astolfi, editors, *Proceedings of the Second IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control*, pages 73–78, Seville, Spain, April 2003. Elsevier
- (C-10) S. Martínez, J. Cortés, and F. Bullo. Design of oscillatory control systems. In *IEEE Conf. on Decision and Control*, pages 1509–1514, Las Vegas, Nevada, USA, 2002
- (C-9) F. Bullo, J. Cortés, A. D. Lewis, and S. Martínez. Vector-valued quadratic forms in control theory. In *Mathematical Theory of Networks and Systems*, Notre Dame, IN, August 2002. Electronic Proceedings
- (C-8) J. Cortés, S. Martínez, T. Karatas, and F. Bullo. Coverage control for mobile sensing networks: variations on a theme. In *10th Mediterranean Conference on Control and Automation*, Lisbon, Portugal, 2002
- (C-7) S. Martínez and J. Cortés. Geometric control of robotic locomotion systems. In *Proceedings of the X Fall Workshop on Geometry and Physics*, volume 4 of *Publicaciones de la RSME*, pages 183–198, Madrid, Spain, 2003
- (C-6) J. Cortés, S. Martínez, J.P. Ostrowski, and H. Zhang. Controllability of mechanical systems with constraints and symmetries. In *15th International Symposium on Mathematical Theory of Networks and Systems*, South Bend, Indiana, USA, 2002
- (C-5) J. Cortés, S. Martínez, T. Karatas, and F. Bullo. Coverage control for mobile sensing networks. In *IEEE Int. Conf. on Robotics and Automation*, pages 1327–1332, Washington, USA, 2002
- (C-4) S. Martínez, J. Cortés, and F. Bullo. Analysis of oscillatory control systems. *IFAC Proceedings Volumes*, 35(1):241–246, 2002. *IFAC World Congress*, Barcelona, Spain
- (C-3) J. Cortés, S. Martínez, and F. Bullo. On nonlinear controllability and series expansions for Lagrangian systems with damping. In *IEEE Conf. on Decision and Control*, pages 2619–2624, Orlando, Florida, USA, 2001
- (C-2) J. Cortés, M. de León, D. Martín de Diego, and S. Martínez. Non-constant rank constraints. In *Proceedings of the VIII Fall Workshop on Geometry and Physics (Spanish) (Medina del Campo, 1999)*, volume 2 of *Publ. R. Soc. Mat. Esp.*, pages 41–54. R. Soc. Mat. Esp., Madrid, 2001
- (C-1) J. Cortés and S. Martínez. Optimal control for nonholonomic systems with symmetry. In *IEEE Conf. on Decision and Control*, pages 5216–5218, Sydney, Australia, 2000

Other Publications

- (O-4) N. Ahmed, J. Cortés, and S. Martínez. Distributed control and estimation of robotic vehicle networks: a review of the special issue – part ii. *IEEE Control Systems Magazine*, 36(4):18–21, 2016
- (O-3) N. Ahmed, J. Cortés, and S. Martínez. Distributed control and estimation of robotic vehicle networks: a review of the special issue. *IEEE Control Systems Magazine*, 36(2):36–40, 2016
- (O-2) F. Bullo, J. Cortés, and B. Piccoli. Special issue on control and optimization in cooperative networks. *SIAM Journal on Control and Optimization*, 48(1):vii, 2009
- (O-1) M. Gavrilova, J. Cortés, and R. Jarvis. Special issue on computational geometry in navigation and path planning. *IEEE Robotics and Automation Magazine*, 15(2):6–7, 2008