

# Highlights - Daniel P. Palomar

## Research

- Publications: 4 books, 7 book chapters, 113 published journal papers, h-index of 58/41 (Google Scholar/ISI Web of Science), top two cited papers with 1,615 and 1,316 citations, total number of citations of 16,000.
- 2020 Young Author **Best Paper Award** (co-author) by the IEEE Signal Processing Society.
- **Plenary Speaker** at the Graph Signal Processing (GSP) Workshop 2020, Madrid, Spain.
- 2020 Young Author **Best Paper Award** (co-author) by the IEEE Signal Processing Society.
- **Invited Tutorial Speaker** at Eurocast 2019, Las Palmas de Gran Canaria, Spain.
- **Plenary Speaker** at IEEE SSP 2018, Freiburg, Germany.
- **Plenary Speaker** at IEEE CAMSAP 2017, Curaçao, Dutch Antilles.
- 2016 **Research Excellence Award** by HKUST.
- 2015 Young Author **Best Paper Award** (co-author) by the IEEE Signal Processing Society.
- **IEEE Fellow** for “contributions to convex optimization-based signal processing for communications”
- **Fellow** of the Institute for Advanced Study of HKUST (2013-2018).
- 2004 Young Author **Best Paper Award** by the IEEE Signal Processing Society.
- Seven **Highly Cited Papers** (ISI Web of Knowledge).
- **Keynote Speaker** at 2013 Workshop In Memory of Are Hjørungnes, NTNU, Trondheim, Norway
- **Keynote Speaker** at 2009 Australian Comm. Theory Workshop (AusCTW2009), Sydney, Australia.
- **Plenary Speaker** at 2008 IEEE Workshop on SP Advances in Wireless Comm. (SPAWC'08), Brazil.
- Steady research funding from RGC, prestigious joint Hong Kong – Mainland China (RGC – NSFC) funding award, and RPC award twice. Total amount of HK\$6,502,219 as PI.
- Associate Editor of IEEE Trans. on Information Theory and IEEE Trans. on Signal Processing, General Chair of Workshop CAMSAP 2009, Chair of IEEE HK Information Theory Society 2010.

## Teaching

- MSc course MFIT5009 - Optimization in FinTech, MSc in FinTech.
- MSc course MAFS5310 - Portfolio Optimization with R, MSc in Financial Mathematics.
- Undergraduate course ELEC3189/IEDA3180 – Data-Driven Portfolio Optimization.
- Postgraduate course ELEC5470/IEDA6100A - Convex Optimization: very well received by the students and faculty from different departments like ECE, CSE, MATH, and IELM. Student evaluation always gives a high score around 98/100 points.
- Co-edited a textbook to support the course ELEC5470 (jointly with Yonina Eldar) entitled *Convex Optimization in Signal Processing and Communications*, Cambridge University Press, 2009.

## Service

- Chair of the Search & Appointments Committee (2018-2019).
- Member of the ECE Long-Term Plan Committee (2017-present).
- Member of the Research Awards Selection Committee (2018-2019).
- Member of the Honorary Awards Committee (2014-2016).
- Member of the PG (postgraduate) committee (2009-present).

# CV - Daniel P. Palomar

Department of Electronic & Computer Engineering  
 Department of Industrial Engineering & Decision Analytics  
 The Hong Kong University of Science and Technology (HKUST)  
 Clear Water Bay, Kowloon  
 Hong Kong

Phone: +852 2358 7060  
 Fax: +852 2358 1485  
 E-mail: [palomar@ust.hk](mailto:palomar@ust.hk)  
 URL: <https://www.danielppalomar.com>

## Academic Qualifications

Years	Institution	Qualification
1/1999 – 5/2003	Technical University of Catalonia (UPC), Barcelona, Spain (exchange student at Stanford University)	Ph.D. cum laude in EE
1998	King's College London (KCL), London, UK	M.Sc. with honors in EE
10/1993 – 10/1998	Technical University of Catalonia (UPC), Barcelona, Spain	B.Sc. with honors in EE

## Summary of Employment

Period	Employment	Position
6/2014 – present	Hong Kong Univ. of Science and Technology (HKUST)	Full Professor
2013 – 2018	Institute for Advanced Study of HKUST	Fellow
2010 – 2012	Research center CTTC-HK	Consultant
7/2010 – 5/2014	Hong Kong Univ. of Science and Technology (HKUST)	Associate Professor
8/2006 – 6/2010	Hong Kong Univ. of Science and Technology (HKUST)	Assistant Professor
3/2006 – 7/2006	Princeton University, Princeton, NJ	Research Associate
3/2004 – 2/2006	Princeton University, Princeton, NJ	Fulbright Research Fellow
11/2003 – 3/2004	University of Rome “La Sapienza”, Rome, Italy	Visiting Researcher
8/2003 – 11/2003	Royal Institute of Technology (KTH), Stockholm, Sweden	Guest Researcher
1/1999 – 8/2003	Technical University of Catalonia (UPC), Barcelona, Spain	Research Assistant
1/2002 – 12/2002	Telecomm. Tech. Center of Catalonia, Barcelona, Spain	Visiting Researcher
4/2001 – 11/2001	Stanford University, Stanford, CA	Visiting Researcher

## Career Totals

<b>Publications:</b>	Books/monographs	4	
	Book chapters	7	
	Journal papers	113	
	Conference papers	124	
	Highly cited papers	7	(ISI Essential Science Indicators)
	h-index	58/41	(Google Scholar/ISI Web of Knowledge)
	i10-index	133/86	
	Total citations	16,000	
	Citations:		
	top highly cited paper	1,615 / 953	
second highly cited paper	1,316 / 764		
<b>Funding:</b>	Funded projects	23	
	Amount as PI	HK\$9,073,938	
<b>Students advised:</b>	PhD/MPhil students	20/5	
	Visiting students	20	
	Postdocs	7	

## Honors and Awards

- 2020 Young Author **Best Paper Award** (co-author) by the IEEE Signal Processing Society.
- **Plenary Speaker** at the 2020 Graph Signal Processing (GSP) Workshop, Madrid, Spain.
- Tutorial Presenter at the 2019 European Signal Processing Conference (EUSIPCO), A Coruña, Spain.
- Invited Tutorial Speaker at Eurocast 2019, Las Palmas de Gran Canaria, Spain.
- **Plenary Speaker** at IEEE SSP 2018, Freiburg, Germany.
- **Plenary Speaker** at IEEE CAMSAP 2017, Curaçao, Dutch Antilles, Dec. 11, 2017.
- **Invited Speaker** at Global Quant Conference 2017, Deutsche Bank, Hong Kong, Nov. 15, 2017.
- Tutorial Presenter at the 2017 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), New Orleans, USA, March 5-9, 2017.
- Tutorial Presenter at the 2016 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Shanghai, China, March 20-25, 2016.
- 2016 **Research Excellence Award** by HKUST.
- 2015 Young Author **Best Paper Award** (co-author) by the IEEE Signal Processing Society.
- **Fellow** of the Institute for Advanced Study of HKUST since Jan 2013.
- **IEEE Fellow** for “contributions to convex optimization-based signal processing for communications”, 2012.
- **Keynote Speech** at the 2013 Workshop on Signal Proc. And Optimization for Wireless Communications: In Memory of Are Hjørungnes, NTNU, Trondheim, Norway.
- Seven **Highly Cited Papers**<sup>1</sup> (ISI Web of Knowledge) in past 10 years:
  - Yongwei Huang and Daniel P. Palomar, “Rank-Constrained Separable Semidefinite Programming With Applications to Optimal Beamforming,” *IEEE Trans. on Signal Processing*, vol. 58, no. 2, pp. 664-678, Feb. 2010.
  - Mung Chiang, Chee Wei Tan, Daniel P. Palomar, Daniel O’Neill, and David Julian, “Power Control by Geometric Programming,” *IEEE Trans. on Wireless Comm.*, vol. 6, no. 7, pp. 2640-2651, July 2007.
  - Daniel P. Palomar and Sergio Verdú, “Gradient of Mutual Information in Linear Vector Gaussian Channels,” *IEEE Trans. on Information Theory*, vol. 52, no. 1, pp. 141-154, Jan. 2006.
  - Daniel P. Palomar and Mung Chiang, “A Tutorial on Decomposition Methods for Network Utility Maximization,” *IEEE Journal on Selected Areas in Communications: Special Issue on Nonlinear Optimization of Communication Systems*, vol. 24, no. 8, pp. 1439-1451, Aug. 2006.
  - Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Optimal Linear Precoding Strategies for Wideband Noncooperative Systems Based on Game Theory – Part I: Nash Equilibria,” *IEEE Trans. on Signal Processing*, vol. 56, no. 3, pp. 1230-1249, March 2008.
  - Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Optimal Linear Precoding Strategies for Wideband Noncooperative Systems Based on Game Theory – Part II: Algorithms,” *IEEE Trans. on Signal Processing*, vol. 56, no. 3, pp. 1250-1267, March 2008.
  - Daniel P. Palomar, John M. Cioffi, and Miguel Angel Lagunas, “Joint Tx-Rx Beamforming Design for Multicarrier MIMO Channels: A Unified Framework for Convex Optimization,” *IEEE Trans. on Signal Processing*, vol. 51, no. 9, pp. 2381-2401, Sept. 2003.
- Invited Speaker at the 2014 Workshop on Complex Systems Modeling and Estimation Challenges in Big Data (CSM-2014), ISM, Tokyo, Japan.
- Invited Speaker at the 2012 Workshop on Advances in Wireless Communications (AWWC'12), Univ. of Electronic Science and Technology of China (UESTC), Chengdu, China. (Organized by Geoffrey Li and Shaoqian Li.)

---

<sup>1</sup> *Highly cited paper* is an official status given by the ISI Web of Science to the 1% top papers in terms of citations within the field according to Essential Science Indicators<sup>SM</sup>.

- Invited Speaker at the 2012 Workshop on Advances in Wireless Communications (WAWC'12), Southeast Univ., Nanjing, China. (Organized by Zhi Ding and Xiaohu You.)
- Invited Speaker at the 2012 International Workshop on Mathematical Issues in Information Sciences (MIIS'12), Xi'an, China. (Organized by Tom Luo and Hong Wei Liu.)
- Tutorial Presenter at the 2011 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Prague, Czech Republic.
- Invited Instructor at the 2011 Winter School of Information Theory, Barcelona, Spain.
- Invited Speaker at the 2010 Workshop on Applications of Optimization in Science and Engineering, Institute for Pure and Applied Mathematics (IPAM), UCLA campus, LA, USA.
- Invited Tutorial at the 2010 European Signal Processing Conference (EUSIPCO), Aalborg, Denmark.
- Invited Speaker at the 2010 Workshop on Distributed Decision-Making and Control, LCCC, Lunds University, Sweden.
- **Keynote Speaker** at the 2009 Australian Communication Theory Workshop (AusCTW2009), University of New South Wales, Sydney, Australia.
- **Plenary Speaker** at the 2008 IEEE Workshop on Signal Proc. Advances in Wireless Comm. (SPAWC'08), Recife, Brazil.
- Invited Speaker at the “Panel for Convex Optimization and Applications,” ICASSP 2008, Las Vegas, USA.
- Invited Speaker at the 2007 Workshop on Optimization and Signal Processing (WOSP), Hong Kong.
- Co-recipient of 2006 Best Student Paper Award at ICASSP'06, Toulouse, France.
- 2004 Young Author **Best Paper Award**<sup>2</sup> by the IEEE Signal Processing Society.
- 2004 Prize for the best Doctoral Thesis in Advanced Mobile Communications by the Vodafone Foundation and COIT.
- 3/2004 – 3/2006, Fulbright Scholarship at Princeton University, Princeton, NJ.
- 2002/2003 Rosina Ribalta first prize for the best Doctoral Thesis project within areas of Information Technologies and Communications by the Epson Foundation.
- 2002/2003 best Ph.D. prize within the area of Information Technologies and Communications by the Technical University of Catalonia (UPC).

## Research Group

### Current members:

Guillermo Creus	Visiting BSc student	9/2020 – 2/2021
Shengjie XIU	PhD student	9/2020 – 8/2024
Ziyuan DONG	MPhil student	9/2020 – 8/2022
Xiwen WANG	PhD student	9/2019 – 8/2021
Ze Vinicius	PhD student	9/2019 – 8/2021
Irtaza Khan	MPhil student	9/2018 – 8/2020
Jiaxi YING	PhD student	9/2018 – 8/2022
Rui ZHOU	PhD student	9/2017 – 8/2021

### Alumni:

Sandeep Kumar	Postdoc	4/2017 – 8/2020
Roger Romero Morral	Visiting BSc student	9/2019 – 2/2020
Miguel Cidra Senra	Visiting BSc student	9/2019 – 2/2020
Jasin Machkour	Visiting PhD student	10/2019 – 2/2019

<sup>2</sup> The Young Author Best Paper Award is a very prestigious award given to an outstanding journal paper published by the IEEE Signal Society within a year (with the first author having no more than 30 years at the time of submission).

Junyan LIU	PhD student	9/2015 – 11/2019
Ziping ZHAO	PhD student	9/2014 – 8/2019
Yiwei WANG	MPhil student	9/2017 – 8/2019
Alejandro Martínez Sánchez	Visiting BSc student	9/2018 – 4/2019
Genís Floriach Pigem	Visiting BSc student	9/2018 – 2/2019
Josep M. Gallegos	Visiting BSc student	9/2018 – 2/2019
Linlong Wu	PhD student	9/2014 – 9/2018
Tianyu Qiu	PhD student	9/2014 – 8/2018
Licheng Zhao	PhD student	9/2014 – 5/2018
Konstantinos Benidis	PhD student	9/2013 – 2/2018
Zhongju Wang	PhD student	9/2013 – 8/2017
Rena Cheng	RA	1/2016 – 8/2016
Ying Sun	PhD student	9/2011 – 8/2018
Prabhu Babu	Postdoc	2/2013 – 1/2016
Junxiao Song	PhD student	9/2011 – 8/2015
Yiyong Feng	PhD student	9/2010 – 8/2015
Arnaud Breloy	Visiting PhD student	6/2015 – 7/2013
Maria Gregori	Visiting PhD student	9/2013 – 12/2013
Italo Atzeni	Visiting PhD student	9/2013 – 12/2013
Yang Yang	PhD student	9/2009 – 8/2013
Mengyi Zhang	PhD student	9/2009 – 8/2013
Francisco Rubio	Research Associate	1/2011 – 2/2012
Hui Zhou	Visiting PhD student	2/2011 – 8/2011
Yongwei Huang	Research Associate	4/2011 – 7/2011
Benjamín Béjar	Visiting PhD student	1/2011 – 7/2011
Frankie Chan	Postdoc	4/2010 – 3/2011
Sudhir Singh	Visiting PhD student	9/2010 – 12/2010
Francisco Rubio	Visiting Researcher	8/2010 – 9/2010
Jiaheng Wang	PhD student	9/2006 – 7/2010
Luxmiram Vijayandran	Visiting PhD student	2/2010 – 6/2010
Tian Wang	MPhil student	9/2008 – 7/2010
Luis García Ordóñez	Postdoc	10/2009 – 4/2010
Yongwei Huang	Postdoc	8/2009 – 3/2010
Javier Vía	Visiting Professor	9/2009 – 1/2010
Gesualdo Scutari	Research Associate	2/2009 – 12/2009
Francisco Rubio	Visiting Researcher	8/2009 – 9/2009
Francisco Rubio	Visiting Researcher	7/2008 – 8/2008
Gesualdo Scutari	Postdoc	5/2008 – 8/2008
Yongwei Huang	Postdoc	2/2008 – 4/2009
Svante Bergman	Visiting PhD student	2/2008 – 5/2008
Gesualdo Scutari	Postdoc	9/2007 – 1/2008
Luis G. Ordoñez	Visiting PhD student	3/2007 – 9/2007
Miquel Payaró	Postdoc	2/2007 – 12/2008
Jonathan Duplicy	Visiting PhD student	11/2006 – 4/2007
Xiaoting Wu	MPhil student	9/2006 – 12/2008

#### Visiting PhD students:

Jasin Machkour	Technische Universität Darmstadt	Advisor: Michael Muma	Germany
Arnaud Breloy	CentraleSupélec, Univ. Paris-Saclay	Advisor: Frédéric Pascal	France
Maria Gregori	Research center CTTC	Advisor: Miquel Payaró	Spain
Italo Atzeni	Technical Univ. of Catalonia (UPC)	Advisor: Javier R. Fonollosa	Spain
Abolfazl Hashemi	Shariff Univ. of Technology		Iran

Hui Zhou	Tsinghua Univ.	Advisor: Pinying Fan	China
Benjamín Béjar	Technical Univ. of Madrid (UPM)	Advisor: Santiago Zazo	Spain
Sudhir Singh	Victoria Univ. of Wellington	Advisor: Paul Teal	New Zealand
Luxmiram Vijayandran	Norwegian Univ. of Science and Technology (NTNU)	Advisor: Torbörn Ekman	Norway
Svante Bergman	Royal Institute of Technology (KTH)	Advisor: Björn Ottersten	Sweden
Luis G. Ordoñez	Technical Univ. of Catalonia (UPC)	Advisor: Javier R. Fonollosa	Spain
Jonathan Duplicy	Université catholique de Louvain (UCL)	Advisor: Luc Vandendorpe	Belgium

### MPhil/PhD Theses:

Junyan LIU	PhD	Parameter Estimation from Data with Missing Values and Heavy Tails	Jan. 2020
Ziping ZHAO	PhD	Signal Processing and Machine Learning for Statistical Arbitrage in Finance: Models, Algorithms, and Analysis	Aug. 2019
Yiwei WANG	MPhil	Applications of Optimization in Graph Learning and Clustering	Jun. 2019
Linlong WU	PhD	Optimization Methods for Radar Waveform Design	Aug. 2018
Tianyu QIU	PhD	Optimization Methods for Quadratic Inverse Problems: Phase Retrieval and MISO Channel Tracking	Jun. 2018
Licheng ZHAO	PhD	Miscellaneous Efficient Optimization Algorithms: Theory and Applications	May 2018
Konstantinos Benidis	PhD	High-Dimensional Sparsity Methods in Machine Learning and Finance	Jan. 2018
Zhongju WANG	PhD	MIMO and OFDM Channel Estimation via Sequence Optimization	Aug. 2017
Ying SUN	PhD	Majorization-Minimization Algorithm and Its Applications in Robust Covariance Matrix Estimation	Aug. 2016
Junxiao SONG	PhD	Efficient Optimization Methods for High-Dimensional Problems in Machine Learning and Signal Processing	Aug. 2015
Yiyong FENG	PhD	Convex Optimization Methods for Financial Engineering: Order Execution and Portfolio Design	Aug. 2015
Yang YANG	PhD	Distributed Optimization in Financial Engineering, Signal Processing, and Communication Networks	Aug. 2013
Mengyi ZHANG	PhD	High-Dimensional Signal Processing in Wireless Communications and Financial Systems	Aug. 2013
Jiaheng WANG	PhD	Robust Designs for Wireless Communication Systems	Aug. 2010
Tian WANG	MPhil	Portfolio Optimization Based on Random Matrix Theory	May 2010
Xiaoting WU	MPhil	Array Signal Processing for MIMO Radar	Jan. 2009

### Teaching

- MSc course MFIT5009 - Optimization in FinTech, MSc in FinTech.
- MSc course MAFS5310 - Portfolio Optimization with R, MSc in Financial Mathematics.
- Undergraduate course ELEC3189/IEDA3180 – Data-Driven Portfolio Optimization.
- Postgraduate course ELEC5470/IEDA6100A - Convex Optimization: very well received by the students and faculty from different departments like ECE, CSE, MATH, and IELM. Student evaluation always gives a high score around 98/100 points.

- Co-edited a textbook to support the course ELEC5470 (jointly with Yonina Eldar) entitled *Convex Optimization in Signal Processing and Communications*, Cambridge University Press, 2009.<sup>3</sup>

## Funded Projects

Grant	Role	Title	Duration	Amount
GRF 2020-21 16207820	PI	Data-Driven Methods for Large-Scale Network Inference	1/1/2021 – 31/12/2023	HK\$602,349
GRF 2019-20 16207019	PI	Optimization Methods for Structured Graph Learning via Spectral Constraints	1/9/2020 – 31/12/2022	HK\$673,470
GRF 2016-17 16208917	PI	Portfolio Optimization: From Wireless Communications to Financial Engineering	1/9/2017 – 31/8/2020	HK\$600,000
RGC 2015/16 TRS Grant T21-602/15R	Co-I	Smart Urban Water Supply Systems	1/1/2016 – 31/12/2020	HK\$49,296,000
HKUST 2015/17 FP602	PI	Low Complexity Techniques for Frugal Covariance Sensing	15/10/2015 – 14/10/2017	HK\$95,900
RGC 2015/16-16206315	PI	Convex Optimization Methods for Advanced Sequence Design	1/9/2015 – 31/8/2018	HK\$696,029
RGC 2014/15-16207814	PI	Parameter Estimation for Heavy-Tailed Distributions with Outliers	9/2014 – 8/2017	HK\$796,828
RGC 2012/13-617312	PI	Discovering signals in large sets of high-dimensional data	9/2012 – 8/2015	HK\$575,000
RPC11EG39	PI	Adaptive Learning for Decision-Making: From Signal Processing to Financial Engineering	6/2011 – 5/2014	HK\$320,000
RGC 2011/12-617911	PI	Robust Optimization and Estimation: On the Pathway to Practical Implementations	9/2011 – 8/2014	HK\$721,050
RGC 2011/12-610411	Co-I (PI: Brahim Bensaou)	Taming IEEE802.11- based WLANs via joint-Channel assignment, Association Control, Rate Control, and Contention resolution	1/2012 – 12/2014	HK\$699,122
RGC 2010/11-617810	PI	Variational Inequality Theory: A Framework for Optimization, Game Theory, and Complementary Problems with Applications in Signal Processing and Communication Systems	1/2011 – 4/2014	HK\$578,287
RGC 2009/10-618709	PI	Cognitive Radio Wireless Systems: From Conservative To Flexible Designs via	1/2010 – 12/2012	HK\$1,065,418

<sup>3</sup> The course ELEC5470 follows a case-study approach by considering recent successful applications on convex optimization; this motivated the edition of a textbook that precisely compiles tutorials of these recent applications written by the original authors.

		Variational Inequalities		
NSFC/RGC N_HKUST604/08	PI (joint w/Pingyin Fan)	Distributed Optimization of Infrastructureless MIMO Communication Networks via Game Theory	1/2009 – 12/2011	HK\$667,600
DAG_S08/09.EG05	PI	Precoder design for MIMO channels with arbitrary signaling	6/2009 – 6/2010	HK\$67,160
RGC09/10-610409	Partner (PI: Brahim Bensaou)	Joint Contention Windows adjustment and congestion control in multi-radio wireless mesh networks	7/2009 – 6/2012	HK\$658,007
Consolider-Ingenio project CDS2008-00010 (National Research Plan of Spain)	Partner (PI: Javier Fonollosa )	Foundations and Methodologies for Future Communication and Sensor Networks (COMONSENS)	2010 – 2015	€3,500,000
RGC08/09-618008	PI	Distribution of the Eigenvalues of Random Covariance Matrices with Applications to MIMO Communication Systems	1/2009 – 12/2010	HK\$571,647
HKTIT/VFP/08-003	PI	Fellow Visiting Program, to visit The Technion, Israel	12/2008 – 1/2009	HK\$43,200
RPC07/08.EG23	PI	Waveform Design for MIMO Radar: An Emerging and Promising Technology	5/2008 – 4/2010	HK\$300,000
NSFC-60702081 (Mainland China)	Partner (PI: Weiqiang Xu)	Generalized Congestion Control for Ad Hoc Networks under the Non-cooperative and High Dynamic Environment	1/2008 – 12/2010	¥260,000
Consolider project TEC2006-06481/TCM (National Research Plan of Spain)	Partner (PI: Javier Fonollosa )	Fundamental Bounds in Network Information Theory (LITIS)	11/2006 – 11/2010	€360,000
DAG06/07.EG02	PI	Analytical Performance Characterization of Low- Complexity Linearly Precoded MIMO Systems	12/2006 – 11/2007	HK\$100,000

## Professional Service

- Member of the IEEE Bell Graham Medal Committee (2013 – 2016).

## Journal Editorship

- Guest Editor of the 2020 Special Issue of *Elsevier Signal Processing* on “Processing and Learning over Graphs.”
- Guest Editor of the 2016 Special Issue of *IEEE Journal of Selected Topics in Signal Processing* on “Financial Signal Processing and Machine Learning for Electronic Trading.”
- Associate Editor of *IEEE Trans. on Information Theory* (2010 – 2014).
- Associate Editor of *IEEE Trans. on Signal Processing* (2007 – 2010).
- Editor of the book *Convex Optimization in Signal Processing and Communications*, Cambridge Univ. Press, 2009. (Co-editor: Yonina C. Eldar.)



- Guest Editor of the 2010 Special Issue of *IEEE Signal Processing Magazine* on “Convex Optimization for Signal Processing.” (Co-editors: T. Luo, Y. Eldar, K. Ma, and N. Sidiropoulos.)
- Guest Editor of the 2008 Special Issue of *IEEE Journal on Selected Areas in Communications* on “Game Theory in Communication Systems.” (Co-editors: J. Huang, N. Mandayan, S. Wicker, J. Walrand, and T. Basar.)
- Lead Guest Editor of the 2007 Special Issue of *IEEE Journal on Selected Areas in Communications* on “Optimization of MIMO Transceivers for Realistic Communication Network: Challenges and Opportunities.” (Co-editors: Tim Davidson, Sergio Barbarossa, Andrea Goldsmith, and Georgios Giannakis.)

### Conference organization

- Organizing Committee (Tutorial Chair) of the 2015 IEEE Workshop on Signal Proc. Advances in Wireless Comm. (SPAWC), Stockholm, Sweden.
- Organizing Committee (Tutorial Chair) of the 2015 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Brisbane, Australia.
- Organizing Committee (Keynote Speakers Chair) of the 2014 International Symposium on Wireless Communication Systems (ISWCS), Barcelona, Spain.
- Organizer of Asilomar 2013 special session on “Financial Engineering and Signal Processing,” Pacific Grove, California, USA.
- Organizer of CAMSAP 2011 special session on “Signal Processing Applications to Financial Engineering,” Puerto Rico.
- Co-organizer of DSP 2011 special session on “Game Theory in Signal Processing for Communications,” Corfu, Greece.
- Organizing Committee (Tutorial Chair) of the 2011 European Signal Processing Conference (EUSIPCO), Barcelona, Spain.
- Co-organizer of CIP 2010 special session on “Game Theoretic Tools for Cognitive Radios,” Elba, Italy.
- Chair of the IEEE Hong Kong Information Theory Society (2010).
- General Co-Chair of the 2009 IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP), Aruba.
- Vice-Chair of the IEEE Hong Kong Information Theory Society (2009).
- Organizing Committee of the 2009 IEEE Workshop on Signal Proc. Advances in Wireless Comm. (SPAWC), Perugia, Italy.
- Organizing Committee of the 2009 IEEE Taiwan/Hong Kong/Macau Joint Workshop on Information Theory and Communications, Macau.
- Organizer of CAMSAP’09 special session on “Game Theory in Multisensor Signal Processing,” Aruba.
- Organizer of CIP2010 special session on “Game-theoretic tools for cognitive radios,” Elba, Italy.
- Organizer of GameNets’09 special session on “Game Theory for Communication Systems,” Istanbul, Turkey.
- Member of the IEEE SPCOM Technical Committee (2007 – 2010).
- Co-organizer of ICASSP-2007 special session on “Optimization of Communication Systems.” (Co-organizer: Mung Chiang.)

### Review

- Member of the following Technical Program Committees (TPCs): SAM (2014), ICASSP (2008-2013), ISIT (2009, 2011, 2013), SPAWC (2009-2013), ITW (2013), CAMSAP (2005, 2007, 2009, 2011, 2013), GlobalSIP (2013), ISWCS (2013), SSPW (2011), CROWN (2010), Gamecomm (2009), GameNets (2009), ICCS (2008), Necsys (2009), WiOpt (2008, 2009), ICC (2009-2010), PIMRC (2008), RAWNET (2007-2010), VTC (2007), WCNC (2007).
- Reviewer for the following journals:
  - *IEEE Trans. on Signal Processing*

- *IEEE Trans. on Information Theory*
- *IEEE Trans. on Communications*
- *IEEE Journal on Selected Areas in Communications*
- *IEEE Trans. on Wireless Communications*
- *IEEE Trans. on Automatic Control*
- *IEEE Signal Processing Magazine*
- *EURASIP Signal Processing*

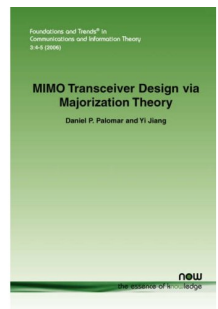
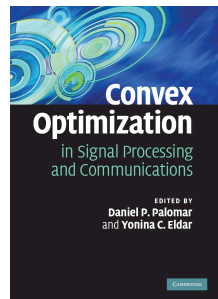
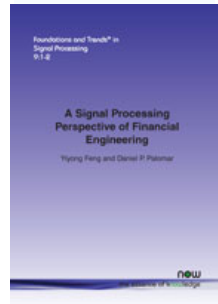
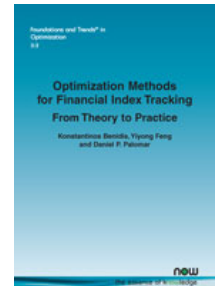
## **University Service**

- Member of the ECE Salary Review Committee (2021-present)
- Member of the ECE PG (postgraduate) committee (2009-present).
- Member of the ECE Long-Term Plan Committee (2017-present).
- Chair of the ECE Search & Appointments Committee (2018-2019).
- Member of the SENG Research Awards Selection Committee (2018-2019).
- Member of the SENG Internal Review Committee (2016-2018).
- Member of the ECE Search & Appointments Committee (2015-2018).
- Member of the ECE Office Renovation Committee (2015-2017).
- Member of the Honorary Awards Committee (2014-2016).
- Member of the ECE Merit Salary Review Committee (2012-2017).
- Faculty in charge of the PQE at the ECE Dept. (2009-2018).
- Organizer of the ECE departmental weekly lunch seminars (2011-2017).
- Faculty in charge of the ECE Dual International MPhil program (2010-2015).
- Member of the Quantitative Finance Search Committee (2012).
- Member of the SENG Financial Engineering Minor committee (2011).
- Member of the SENG Financial Engineering Taskforce committee (2009).
- Member of the ECE UG (undergraduate) committee (2006-2009).
- Mentor of ECE UG international students (2006-2009).

## Publications

### Books and Monographs (4)

- Konstantinos Benidis, Yiyong Feng, and Daniel P. Palomar, *Optimization Methods for Financial Index Tracking: From Theory to Practice*, Foundations and Trends® in Optimization, Now Publishers, 2018.
- Yiyong Feng and Daniel P. Palomar, *A Signal Processing Perspective on Financial Engineering*, Foundations and Trends® in Signal Processing, Now Publishers, 2016.
- Daniel P. Palomar and Yonina C. Eldar, Eds., *Convex Optimization in Signal Processing and Communications*, Cambridge University Press, 2009.
- Daniel P. Palomar and Yi Jiang, *MIMO Transceiver Design via Majorization Theory*, Foundations and Trends® in Communications and Information Theory, Now Publishers, 2007.



### Book Chapters (7)

- Linlong Wu and Daniel P. Palomar, “Radar Waveform Design via the Majorization-Minimization Framework,” in *Radar Waveform Design Based on Optimization Theory*, Ch. 7, Eds. Guolong Cui, Antonio De Maio, Alfonso Farina, and Jian Li, The Institution of Engineering and Technology, 2020.
- Gesualdo Scutari, Daniel P. Palomar, Francisco Facchinei, and Jong-Shi Pang, “Monotone Games for Cognitive Radio Systems,” in *Distributed Decision-Making and Control*, Ch. 4, Eds. Anders Rantzer and Rolf Johansson, Lecture Notes in Control and Information Sciences Series, Springer Verlag, 2011.

- Jiaheng Wang and Daniel P. Palomar, “Majorization Theory with Applications in Signal Processing and Communication Systems,” in *Mathematical Foundations for Signal Processing, Communications and Networking*, Ch. 16, Eds. Thomas Chen, Dinesh Rajan, and Erchin Serpedin, CRC Press, 2011.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Competitive Optimization of Cognitive Radio MIMO Systems via Game Theory,” in *Convex Optimization in Signal Processing and Communications*, Eds. Daniel P. Palomar and Yonina C. Eldar, Cambridge University Press, 2009.
- Mung Chiang, Chee Wei Tan, Daniel P. Palomar, Daniel O’Neill, and David Julian, “Power Control by Geometric Programming,” in *Resource Allocation in Next Generation Wireless Networks*, vol. 5, Chapter 13, pp. 289-313, W. Li, Y. Pan, Editors, Nova Sciences Publishers, ISBN 1-59554-583-9, 2005.
- Daniel P. Palomar, A. Pascual-Iserte, John M. Cioffi, and Miguel A. Lagunas, “Convex Optimization Theory Applied to Joint Transmitter-Receiver Design in MIMO Channels,” in *Space-Time Processing for MIMO Communications*, Chapter 8, pp. 269-318, A. B. Gershman and N. Sidiropoulos, Editors, John Wiley & Sons, ISBN 0-470-01002-9, April 2005.
- Daniel P. Palomar, “Unified Design of Linear Transceivers for MIMO Channels,” in *Smart Antennas – State-of-the-Art*, Chapter 18, EURASIP Hindawi Book Series, T. Kaiser, A. Bourdoux, H. Boche, J. R. Fonollosa, J. B. Andersen, and W. Utschick, Editors, ISBN 977-5945-09-7, 2005.

### Journal Papers<sup>4</sup> (113)

- Arnaud Breloy, Sandeep Kumar, Ying Sun, and Daniel P. Palomar, “Majorization-Minimization on the Stiefel Manifold with Application to Robust Sparse PCA,” *IEEE Trans. on Signal Processing*, vol. 69, pp. 1507-1520, Feb. 2021.
- Jiayi Ying, José Vinícius de M. Cardoso, and Daniel P. Palomar, “Minimax Estimation of Laplacian Constrained Precision Matrices,” in *Proc. of the 24<sup>th</sup> International Conference on Artificial Intelligence and Statistics (AISTATS)*, vol. 130, pp. 3736-3744, April 2021.
- Rui Zhou and Daniel P. Palomar, “Solving High-Order Portfolios via Successive Convex Approximation Algorithms,” *IEEE Trans. on Signal Processing*, vol. 69, pp. 892-904, Feb. 2021.
- Esa Ollila, Daniel P. Palomar, and Frédéric Pascal, “Shrinking the Eigenvalues of M-estimators of Covariance Matrix,” *IEEE Trans. on Signal Processing*, vol. 69, pp. 256-269, Jan. 2021.
- Rui Zhou, Junyan Liu, Sandeep Kumar, and Daniel P. Palomar, “Student’s t VAR Modeling with Missing Data via Stochastic EM and Gibbs Sampling,” *IEEE Trans. on Signal Processing*, vol. 68, pp. 6198-6211, Oct. 2020.
- Jiayi Ying, José Vinícius de M. Cardoso, and Daniel P. Palomar, “Nonconvex Sparse Graph Learning under Laplacian Constrained Graphical Model,” *Advances in Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada, Dec. 2020.
- Rui Zhou and Daniel P. Palomar, “Understanding the Quintile Portfolio,” *IEEE Trans. on Signal Processing*, vol. 68, pp. 4030-4040, July 2020.
- Sandeep Kumar, Jiayi Ying, José Vinícius de M. Cardoso, and Daniel P. Palomar, “A Unified Framework For Structured Graph Learning Via Spectral Constraints,” *Journal of Machine Learning Research (JMLR)*, 21(22): 1-60, Jan. 2020.
- Linlong Wu, Yiyong Feng, and Daniel P. Palomar, “General Sparse Risk Parity Portfolio Design via Successive Convex Optimization,” *Signal Processing*, vol. 170, pp. 1-13, Dec. 2019.
- Sandeep Kumar, Jiayi Ying, José Vinícius de M. Cardoso, and Daniel P. Palomar, “Structured Graph Learning Via Laplacian Spectral Constraints,” *Advances in Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada, Dec. 2019.
- Kaiming Shen, Wei Yu, Licheng Zhao, and Daniel P. Palomar, “Optimization of MIMO Device-to-Device Networks via Matrix Fractional Programming: A Minorization-Maximization Approach,” *IEEE/ACM Trans. on Networking*, vol. 27, no. 5, pp. 2164-2177, Oct. 2019.

---

<sup>4</sup> Including conferences NeurIPS and AISTATS with acceptance rate around 20%-30%.

- Linlong Wu and Daniel P. Palomar, "Sequence Design for Spectral Shaping via Minimization of Regularized Spectral Level Ratio," *IEEE Trans. on Signal Processing*, vol. 67, no. 18, pp. 4683-4695, Sept. 2019.
- Licheng Zhao, Yiwei Wang, Sandeep Kumar, and Daniel P. Palomar, "Optimization Algorithms for Graph Laplacian Estimation via ADMM and MM," *IEEE Trans. on Signal Processing*, vol. 67, no. 16, pp. 4231-4244, Aug. 2019.
- Junyan Liu and Daniel P. Palomar, "Regularized Robust Estimation of Mean and Covariance Matrix for Incomplete Data," *Signal Processing*, vol. 165, pp. 278-291, July 2019.
- Junyan Liu, Sandeep Kumar, and Daniel P. Palomar, "Parameter Estimation of Heavy-Tailed AR Model With Missing Data Via Stochastic EM," *IEEE Trans. on Signal Processing*, vol. 67, no. 8, pp. 2159-2172, April 2019.
- Ziping Zhao, Rui Zhou, and Daniel P. Palomar, "Optimal Mean-Reverting Portfolio With Leverage Constraint for Statistical Arbitrage in Finance," *IEEE Trans. on Signal Processing*, vol. 67, no. 7, pp. 1681-1695, April 2019.
- Xun Wang, Daniel P. Palomar, Licheng Zhao, Mohamed S. Guidaoui, and Ross Murch, "Spectral-Based Methods for Pipeline Leakage Localization," *Journal of Hydraulic Engineering*, 145(3), 2019.
- Licheng Zhao and Daniel P. Palomar, "A Markowitz Portfolio Approach to Options Trading," *IEEE Trans. on Signal Processing*, vol. 66, no. 16, pp. 4223-4238, Aug. 2018.
- Ziping Zhao and Daniel P. Palomar, "Mean-Reverting Portfolio With Budget Constraint," *IEEE Trans. on Signal Processing*, vol. 66, no. 9, pp. 2342-2357, May 2018.
- Tianyu Qiu, Xiao Fu, Nicholas D. Sidiropoulos, and Daniel P. Palomar, "MISO Channel Estimation and Tracking from Received Signal Strength Feedback," *IEEE Trans. on Signal Processing*, vol. 66, no. 7, pp. 1691-1704, April 2018.
- Linlong Wu, Prabhu Babu, and Daniel P. Palomar, "Transmit Waveform/Receive Filter Design for MIMO Radar With Multiple Sequence Constraints," *IEEE Trans. on Signal Processing*, vol. 66, no. 6, pp. 1526-1540, March 2018.
- Konstantinos Benidis, Yiyong Feng, and Daniel P. Palomar, "Sparse Portfolios for High-Dimensional Financial Index Tracking," *IEEE Trans. on Signal Processing*, vol. 66, no. 1, pp. 155-170, Jan. 2018.
- Tianyu Qiu and Daniel P. Palomar, "Undersampled Sparse Phase Retrieval via Majorization-Minimization," *IEEE Trans. on Signal Processing*, vol. 65, no. 22, pp. 5957-5969, Nov. 2017.
- Zhongju Wang, Prabhu Babu, and Daniel P. Palomar, "Effective Low-Complexity Optimization Methods for Joint Phase Noise and Channel Estimation in OFDM," *IEEE Trans. on Signal Processing*, vol. 65, no. 12, pp. 3247-3260, June 2017.
- Shanpu Shen, Ying Sun, Sichao Song, Daniel P. Palomar, and Ross D. Murch, "Successive Boolean Optimization of Planar Pixel Antennas," *IEEE Trans. on Antennas and Propagation*, vol. 65, no. 2, pp. 920-925, Feb. 2017.
- Licheng Zhao and Daniel P. Palomar, "Maximin Joint Optimization of Transmitting Code and Receiving Filter in Radar and Communications," *IEEE Trans. on Signal Processing*, vol. 65, no. 4, pp. 850-863, Feb. 2017.
- Ying Sun, Prabhu Babu, and Daniel P. Palomar, "Majorization-Minimization Algorithms in Signal Processing, Communications, and Machine Learning," *IEEE Trans. on Signal Processing*, vol. 65, no. 3, pp. 794-816, Feb. 2017.

↳  2020 Young Author **Best Paper Award** by the IEEE Signal Processing Society

- Linlong Wu, Prabhu Babu, and Daniel P. Palomar, "Cognitive Radar-Based Sequence Design via SINR Maximization," *IEEE Trans. on Signal Processing*, vol. 65, no. 3, pp. 779-793, Feb. 2017.
- Licheng Zhao, Junxiao Song, Prabhu Babu, and Daniel P. Palomar, "A Unified Framework for Low Autocorrelation Sequence Design via Majorization-Minimization," *IEEE Trans. on Signal Processing*, vol. 65, no. 2, pp. 438-453, Jan. 2017.




- Javier Rubio, Antonio Pascual-Iserte, Daniel P. Palomar, and Andrea Goldsmith, “Joint Optimization of Power and Data Transfer in Multiuser MIMO Systems,” *IEEE Trans. on Signal Processing*, vol. 65, no. 1, pp. 212-227, Jan. 2017.
- Zhongju Wang, Prabu Babu, and Daniel P. Palomar, “Design of PAR-Constrained Sequences for MIMO Channel Estimation via Majorization-Minimization,” *IEEE Trans. on Signal Processing*, vol. 64, no. 23, pp. 6132-6144, Dec. 2016.
- Konstantinos Benidis, Ying Sun, Prabhu Babu, and Daniel P. Palomar, “Orthogonal Sparse PCA and Covariance Estimation via Procrustes Reformulation,” *IEEE Trans. on Signal Processing*, vol. 64, no. 23, pp. 6211-6226, Dec. 2016.
- Tianyu Qiu, Prabhu Babu, and Daniel P. Palomar, “PRIME: Phase Retrieval via Majorization-Minimization,” *IEEE Trans. on Signal Processing*, vol. 64, no. 19, pp. 5174-5186, Oct. 2016.
- Licheng Zhao, Prabhu Babu, and Daniel P. Palomar, “Efficient Algorithms on Robust Low-Rank Matrix Completion Against Outliers,” *IEEE Trans. on Signal Processing*, vol. 64, no. 18, pp. 4767- 4780, Sept. 2016.
- Yang Yang, Marius Pesavento, Mengyi Zhang, and Daniel P. Palomar, “An Online Parallel Algorithm for Recursive Estimation of Sparse Signals,” *IEEE Trans. on Signal and Inform. Proc. Over Networks*, vol. 2, no. 3, pp. 290-305, Sept. 2016.
- Maria Gregori, Miquel Payaró, and Daniel P. Palomar, “Sum-Rate Maximization for Energy Harvesting Nodes With a Generalized Power Consumption Model,” *IEEE Trans. on Wireless Comm.*, vol. 15, no. 8, pp. 5341-5354, Aug. 2016.
- Ying Sun, Prabhu Babu, and Daniel P. Palomar, “Robust Estimation of Structured Covariance Matrix for Heavy-Tailed Elliptical Distributions,” *IEEE Trans. on Signal Processing*, vol. 64, no. 14, pp. 3576-3590, July 2016.
- Yang Yang, Gesualdo Scutari, Daniel P. Palomar, and Marius Pesavento, “A Parallel Decomposition Method for Nonconvex Stochastic Multi-Agent Optimization Problems,” *IEEE Trans. on Signal Processing*, vol. 64, no. 11, pp. 2949-2964, June 2016.
- Junxiao Song, Prabhu Babu, and Daniel P. Palomar, “Sequence Set Design With Good Correlation Properties Via Majorization-Minimization,” *IEEE Trans. on Signal Processing*, vol. 64, no. 11, pp. 2866-2879, June 2016.
- Ying Sun, Arnaud Breloy, Prabhu Babu, Daniel P. Palomar, Frédéric Pascal, and Guillaume Ginolhac, “Low-Complexity Algorithms for Low Rank Clutter Parameter Estimation in Radar Systems,” *IEEE Trans. on Signal Processing*, vol. 64, no. 8, pp. 1986-1998, April 2016.
- Junxiao Song, Prabhu Babu, and Daniel P. Palomar, “Sequence Design to Minimize the Weighted Integrated and Peak Sidelobe Levels,” *IEEE Trans. on Signal Processing*, vol. 64, no. 8, pp. 2051-2064, April 2016.
- Yiyong Feng and Daniel P. Palomar, “SCRIP: Successive Convex Optimization Methods for Risk Parity Portfolio Design,” *IEEE Trans. on Signal Processing*, vol. 63, no. 19, pp. 5285-5300, Oct. 2015.
- Yiyong Feng and Daniel P. Palomar, “Normalization of Linear Support Vector Machines,” *IEEE Trans. on Signal Processing*, vol. 63, no. 17, pp. 4673-4688, Sept. 2015.
- Junxiao Song, Prabhu Babu, and Daniel P. Palomar, “Optimization Methods for Designing Sequences With Low Autocorrelation Sidelobes,” *IEEE Trans. on Signal Processing*, vol. 63, no. 15, pp. 3998-4009, Aug. 2015.
- Ying Sun, Prabhu Babu, and Daniel P. Palomar, “Regularized Robust Estimation of Mean and Covariance Matrix Under Heavy-Tailed Distributions,” *IEEE Trans. on Signal Processing*, vol. 63, no. 12, pp. 3096-3109, June 2015.
- Junxiao Song, Prabhu Babu, and Daniel P. Palomar, “Sparse Generalized Eigenvalue Problem via Smooth Optimization,” *IEEE Trans. on Signal Processing*, vol. 63, no. 7, pp. 1627-1642, April 2015.
- Yiyong Feng, Daniel P. Palomar, and Francisco Rubio, “Robust Optimization of Order Execution,” *IEEE Trans. on Signal Processing*, vol. 63, no. 4, pp. 907-920, Feb. 2015.

- Antonio A. D'Amico, Luca Sanguinetti, and Daniel P. Palomar, "Convex Separable Problems with Linear Constraints in Signal Processing and Communications," *IEEE Trans. on Signal Processing*, vol. 62, no. 22, pp. 6045-6058, Nov. 2014.
  - Ying Sun, Prabhu Babu, and Daniel P. Palomar, "Regularized Tyler's Scatter Estimator: Existence, Uniqueness, and Algorithms," *IEEE Trans. on Signal Processing*, vol. 62, no. 19, pp. 5143-5156, Oct. 2014.
  - Gesualdo Scutari, Francisco Facchinei, Jong-Shi Pang, and Daniel P. Palomar, "Real and Complex Monotone Communication Games," *IEEE Trans. on Information Theory*, vol. 60, no. 7, pp. 4197-4231, July 2014.
  - Italo Atzeni, Luis G. Ordóñez, Gesualdo Scutari, Daniel P. Palomar, and Javier R. Fonollosa, "Noncooperative Day-Ahead Bidding Strategies for Demand-Side Expected Cost Minimization with Real-Time Adjustments: A GNEP Approach," *IEEE Trans. on Signal Processing*, vol. 62, no. 9, pp. 2397-2412, May 2014.
  - Yongwei Huang and Daniel P. Palomar, "Randomized Algorithms for Optimal Solutions of Double-Sided QCQP with Applications in Signal Processing," *IEEE Trans. on Signal Processing*, vol. 62, no. 5, pp. 1093-1108, March 2014.
  - Gesualdo Scutari, Francisco Facchinei, Peiran Song, Daniel P. Palomar, and Jong-Shi Pang, "Decomposition by Partial Linearization: Parallel Optimization of Multi-Agent Systems," *IEEE Trans. on Signal Processing*, vol. 62, no. 3, pp. 641-656, Feb. 2014.
- ↳ 🏆 2015 Young Author **Best Paper Award** by the IEEE Signal Processing Society
- Benjamín Béjar Haro, Santiago Zazo, and Daniel P. Palomar, "Energy Efficient Collaborative Beamforming in Wireless Sensor Networks," *IEEE Trans. on Signal Processing*, vol. 62, no. 2, pp. 496-510, Jan. 2014.
  - Yang Yang, Francisco Rubio, Gesualdo Scutari, and Daniel P. Palomar, "Multi-Portfolio Optimization: A Potential Game Approach," *IEEE Trans. on Signal Processing*, vol. 61, no. 22, pp. 5590-5602, Nov. 2013.
  - Xiaopeng Fan, Junxiao Song, Daniel P. Palomar, and Oscar C. Au, "Universal Binary Semidefinite Relaxation for ML Signal Detection," *IEEE Trans. on Communications*, vol. 61, no. 11, pp. 4565-4576, Nov. 2013.
  - Yang Yang, Gesualdo Scutari, Peiran Song, and Daniel P. Palomar, "Robust MIMO Cognitive Radio Systems Under Interference Temperature Constraints," *IEEE Journal on Selected Areas in Communications*, vol. 31, no. 11, pp. 2465-2482, Nov. 2013.
  - Mengyi Zhang, Francisco Rubio, Daniel P. Palomar, and Xavier Mestre, "Finite-Sample Linear Filter Optimization in Wireless Communications and Financial Systems," *IEEE Trans. on Signal Processing*, vol. 61, no. 20, pp. 5014-5025, Oct. 2013.
  - Italo Atzeni, Luis G. Ordóñez, Gesualdo Scutari, Daniel P. Palomar, and Javier R. Fonollosa, "Demand-Side Management via Distributed Energy Generation and Storage Optimization," *IEEE Trans. on Smart Grids*, vol. 4, no. 2, pp. 866-876, June 2013.
  - Jiaheng Wang, Mats Bengtsson, Björn Ottersten, and Daniel P. Palomar, "Robust MIMO Precoding for Several Classes of Channel Uncertainty," *IEEE Trans. on Signal Processing*, vol. 61, no. 12, pp. 3056-3070, June 2013.
  - Italo Atzeni, Luis G. Ordóñez, Gesualdo Scutari, Daniel P. Palomar, and Javier R. Fonollosa, "Noncooperative and Cooperative Optimization of Distributed Energy Generation and Storage in the Demand-Side of the Smart Grid," *IEEE Trans. on Signal Processing*, vol. 61, no. 10, pp. 2454-2472, May 2013.
  - Mengyi Zhang, Francisco Rubio, and Daniel P. Palomar, "Improved Calibration of High-Dimensional Precision Matrices," *IEEE Trans. on Signal Processing*, vol. 61, no. 6, pp. 1509-1519, March 2013.
  - Yongwei Huang, Daniel P. Palomar, and Shuzhong Zhang, "Lorentz-Positive Maps and Quadratic Matrix Inequalities With Applications to Robust MISO Transmit Beamforming," *IEEE Trans. on Signal Processing*, vol. 61, no. 5, pp. 1121-1130, March 2013.
  - Ronit Bustin, Miquel Payaró, Daniel P. Palomar, and Shlomo Shamai, "On MMSE Crossing Properties and Implications in Parallel Vector Gaussian Channels," *IEEE Trans. on Information Theory*, vol. 59, no. 2, pp. 818-844, Feb. 2013.
  - Francisco Rubio, Xavier Mestre, and Daniel P. Palomar, "Performance Analysis and Optimal Selection of Large Minimum-Variance Portfolios under Estimation Risk," *IEEE Journal on Selected Topics in Signal*

*Processing: Special Issue on Signal Processing Methods in Finance and Electronic Trading*, vol. 6, no. 4, pp. 337-350, Aug. 2012.

- Luis G. Ordóñez, Daniel P. Palomar, and Javier R. Fonollosa, "Array Gain in the DMT Framework for MIMO," *IEEE Trans. on Information Theory*, vol. 58, no. 7, pp. 4577-4593, July 2012.
- Javier Vía, Daniel P. Palomar, and Luis Vielva, "Generalized Likelihood Ratios for Testing the Properness of Quaternion Gaussian Vectors," *IEEE Trans. on Signal Processing*, vol. 59, no. 4, pp. 1356-1370, April 2011.
- Javier Vía, Daniel P. Palomar, Luis Vielva, and Ignacio Santamaría, "Quaternion ICA from Second-Order Statistics," *IEEE Trans. on Signal Processing*, vol. 59, no. 4, pp. 1586-1600, April 2011.
- Jiaheng Wang, Gesualdo Scutari, and Daniel P. Palomar, "Robust MIMO Cognitive Radio via Game Theory," *IEEE Trans. on Signal Processing*, vol. 59, no. 3, pp. 1183-1201, March 2011.
- Antonio De Maio, Yongwei Huang, Daniel P. Palomar, Shuzhong Zhang, and Alfonso Farina, "Fractional QCQP With Applications in ML Steering Direction Estimation for Radar Detection," *IEEE Trans. on Signal Processing*, vol. 59, no. 1, pp. 172-185, Jan. 2011.
- Eduard Calvo, Daniel P. Palomar, Javier R. Fonollosa, and Josep Vidal, "On the Computation of the Capacity Region of the Discrete MAC," *IEEE Trans. On Communications*, vol. 58, no. 12, pp. 3512-3525, Dec. 2010.
- Jiaheng Wang and Daniel P. Palomar, "Robust MMSE Precoding in MIMO Channels With Pre-Fixed Receivers," *IEEE Trans. on Signal Processing*, vol. 58, no. 11, pp. 5802-5818, Nov. 2010.
- Yongwei Huang and Daniel P. Palomar, "A Dual Perspective on Separable Semidefinite Programming with Applications to Optimal Downlink Beamforming," *IEEE Trans. on Signal Processing*, vol. 58, no. 8, pp. 4254-4271, Aug. 2010.
- Jong-Shi Pang, Gesualdo Scutari, Daniel P. Palomar, and Francisco Facchinei, "Design of Cognitive Radio Systems Under Temperature-Interference Constraints: A Variational Inequality Approach," *IEEE Trans. on Signal Processing*, vol. 58, no. 6, pp. 3251-3271, June 2010.
- Gesualdo Scutari, Daniel P. Palomar, Francisco Facchinei, and Jong-Shi Pang, "Convex Optimization, Game Theory, and Variational Inequality Theory," *IEEE Signal Processing Magazine*, vol. 27, no. 3, pp. 35-49, May 2010.
- Gesualdo Scutari and Daniel P. Palomar, "MIMO Cognitive Radio: A Game Theoretical Approach," *IEEE Trans. on Signal Processing*, vol. 58, no. 2, pp. 761-780, Feb. 2010.
- Antonio De Maio, Silvio De Nicola, Yongwei Huang, Daniel P. Palomar, Shuzhong Zhang, and Alfonso Farina, "Code Design for Radar STAP via Optimization Theory," *IEEE Trans. on Signal Processing*, vol. 58, no. 2, pp. 679-694, Feb. 2010.
- Yongwei Huang and Daniel P. Palomar, "Rank-Constrained Separable Semidefinite Programming With Applications to Optimal Beamforming," *IEEE Trans. on Signal Processing*, vol. 58, no. 2, pp. 664-678, Feb. 2010.
- Svante Bergman, Daniel P. Palomar, and Björn Ottersten, "Joint Bit Allocation and Precoding for MIMO Systems with Decision Feedback Detection," *IEEE Trans. on Signal Processing*, vol. 57, no. 11, pp. 4509-4521, Nov. 2009.
- Gesualdo Scutari, Daniel P. Palomar, Jong-Shi Pang, and Francisco Facchinei, "Flexible Design for Cognitive Wireless Systems: From Game Theory to Variational Inequality Theory," *IEEE Signal Processing Magazine*, vol. 26, no. 5, pp. 107-123, Sept. 2009.
- Jiaheng Wang and Daniel P. Palomar, "Worst-Case Robust MIMO Transmission With Imperfect Channel Knowledge," *IEEE Trans. on Signal Processing*, vol. 57, no. 8, pp. 3086-3100, Aug. 2009.
- Miquel Payaró and Daniel P. Palomar, "Hessian and Concavity of Mutual Information, Differential Entropy, and Entropy Power in Linear Vector Gaussian Channels," *IEEE Trans. on Information Theory*, vol. 55, no. 8, pp. 3613-3628, Aug. 2009.
- Chee Wei Tan, Daniel P. Palomar, and Mung Chiang, "Energy-Robustness Tradeoff in Cellular Network Power Control," *IEEE/ACM Trans. on Networking*, vol. 17, no. 3, pp. 912-925, June 2009.



- Luis G. Ordóñez, Daniel P. Palomar, Alba Pagès-Zamora, and Javier R. Fonollosa, “Minimum BER Linear MIMO Transceivers with Adaptive Number of Substreams,” *IEEE Trans. on Signal Processing*, vol. 57, no. 6, pp. 2336-2353, June 2009.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “The MIMO Iterative Waterfilling Algorithm,” *IEEE Trans. on Signal Processing*, vol. 57, no. 5, pp. 1917-1935, May 2009.
- Luis G. Ordóñez, Daniel P. Palomar, and Javier R. Fonollosa, “Ordered Eigenvalues of a General Class of Hermitian Random Matrices With Application to the Performance Analysis of MIMO Systems,” *IEEE Trans. on Signal Processing*, vol. 57, no. 2, pp. 672-689, Feb. 2009.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Cognitive MIMO Radio: Competitive Optimality Design Based on Subspace Projections,” *IEEE Signal Processing Magazine*, vol. 25, no. 6, pp. 46-59, Nov. 2008.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Competitive Design of Multiuser MIMO Systems based on Game Theory: A Unified View,” *IEEE Journal on Selected Areas in Communications: Special Issue on Game Theory*, vol. 25, no. 7, pp. 1089-1103, Sept. 2008.
- Xi Zhang, Daniel P. Palomar, and Björn Ottersten, “Statistically Robust Design of Linear MIMO Transceivers,” *IEEE Trans. on Signal Processing*, vol. 56, no. 8, pp. 3678-3689, Aug. 2008.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Asynchronous Iterative Water-Filling for Gaussian Frequency-Selective Interference Channels,” *IEEE Trans. on Information Theory*, vol. 54, no. 7, pp. 2868-2878, July 2008.
- Daniel P. Palomar and Sergio Verdú, “Lautum Information,” *IEEE Trans. on Information Theory*, vol. 54, no. 3, pp. 964-975, March 2008.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Optimal Linear Precoding Strategies for Wideband Noncooperative Systems Based on Game Theory – Part I: Nash Equilibria,” *IEEE Trans. on Signal Processing*, vol. 56, no. 3, pp. 1230-1249, March 2008.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Optimal Linear Precoding Strategies for Wideband Noncooperative Systems Based on Game Theory – Part II: Algorithms,” *IEEE Trans. on Signal Processing*, vol. 56, no. 3, pp. 1250-1267, March 2008.
- Daniel P. Palomar and Mung Chiang, “Alternative Distributed Algorithms for Network Utility Maximization: Framework and Applications,” *IEEE Trans. on Automatic Control*, vol. 52, no. 12, pp. 2254-2269, Dec. 2007.
- Luis García-Ordóñez, Daniel P. Palomar, Alba Pagès-Zamora, and Javier R. Fonollosa, “High-SNR Analytical Performance of Spatial Multiplexing MIMO Systems with CSI,” *IEEE Trans. on Signal Processing*, vol. 55, no. 11, pp. 5447-5463, Nov. 2007.
- Mung Chiang, Chee Wei Tan, Daniel P. Palomar, Daniel O’Neill, and David Julian, “Power Control by Geometric Programming,” *IEEE Trans. on Wireless Communications*, vol. 6, no. 7, pp. 2640-2651, July 2007.
- ↳  **Highly cited paper** (ISI Web of Knowledge)
- Daniel P. Palomar and Sergio Verdú, “Representation of Mutual Information via Input Estimates,” *IEEE Trans. on Information Theory*, vol. 53, no. 2, pp. 453-470, Feb. 2007.
- Daniel P. Palomar and Mung Chiang, “A Tutorial on Decomposition Methods for Network Utility Maximization,” *IEEE Journal on Selected Areas in Communications: Special Issue on Nonlinear Optimization of Communication Systems*, vol. 24, no. 8, pp. 1439-1451, Aug. 2006.
- ↳  **Highly cited paper** (ISI Web of Knowledge)
- Daniel P. Palomar and Sergio Verdú, “Gradient of Mutual Information in Linear Vector Gaussian Channels,” *IEEE Trans. on Information Theory*, vol. 52, no. 1, pp. 141-154, Jan. 2006.
- ↳  **Highly cited paper** (ISI Web of Knowledge)
- A. Pascual-Iserte, Daniel P. Palomar, Ana I. Pérez-Neira, and Miguel A. Lagunas, “A Robust Maximin Approach for MIMO Communications with Partial Channel State Information Based on Convex Optimization,” *IEEE Trans. on Signal Processing*, vol. 54, no. 1, pp. 346-360, Jan. 2006.

- Daniel P. Palomar, “Convex Primal Decomposition for Multicarrier Linear MIMO Transceivers,” *IEEE Trans. on Signal Processing*, vol. 53, no. 12, pp. 4661-4674, Dec. 2005.
- Daniel P. Palomar and Sergio Barbarossa, “Designing MIMO Communication Systems: Constellation Choice and Linear Transceiver Design,” *IEEE Trans. on Signal Processing*, vol. 53, no. 10, pp. 3804-3818, Oct. 2005.
- Daniel P. Palomar, Mats Bengtsson, and Björn Ottersten, “Minimum BER Linear Transceivers for MIMO Channels via Primal Decomposition,” *IEEE Trans. on Signal Processing*, vol. 53, no. 8, pp. 2866-2882, Aug. 2005.
- Daniel P. Palomar and Javier Rodriguez Fonollosa, “Practical Algorithms for a Family of Waterfilling Solutions,” *IEEE Trans. on Signal Processing*, vol. 53, no. 2, pp. 686-695, Feb. 2005.
- Daniel P. Palomar, “Unified Framework for Linear MIMO Transceivers with Shaping Constraints,” *IEEE Communications Letters*, vol. 8, no. 12, pp. 697-699, Dec. 2004.
- Daniel P. Palomar, Miguel Angel Lagunas, and John M. Cioffi, “Optimum Linear Joint Transmit-Receive Processing for MIMO Channels with QoS Constraints,” *IEEE Trans. on Signal Processing*, vol. 52, no. 5, pp. 1179-1197, May 2004.
- Daniel P. Palomar, John M. Cioffi, and Miguel Angel Lagunas, “Joint Tx-Rx Beamforming Design for Multicarrier MIMO Channels: A Unified Framework for Convex Optimization,” *IEEE Trans. on Signal Processing*, vol. 51, no. 9, pp. 2381-2401, Sept. 2003.
  - ↳ 🏆 2004 Young Author **Best Paper Award** by the IEEE Signal Processing Society
  - ↳ 🏆 **Highly cited paper** (ISI Web of Knowledge)
- Daniel P. Palomar, John M. Cioffi, and Miguel Angel Lagunas, “Uniform Power Allocation in MIMO Channels: A Game-Theoretic Approach,” *IEEE Trans. on Information Theory*, vol. 49, no. 7, pp. 1707-1727, July 2003.
- Daniel P. Palomar and Miguel Angel Lagunas, “Joint Transmit-Receive Space-Time Equalization in Spatially Correlated MIMO channels: A Beamforming Approach,” *IEEE Journal on Selected Areas in Communications: Special Issue on MIMO Systems and Applications*, vol. 21, no. 5, pp. 730-743, June 2003.
- Daniel P. Palomar and Miguel Angel Lagunas, “Temporal diversity on DS-CDMA communication systems for blind array signal processing,” *EURASIP Signal Processing*, vol. 81, no. 8, pp. 1625-1640, Aug. 2001.
- Daniel P. Palomar, Montse Nájjar, and Miguel Angel Lagunas, “Self-reference Spatial Diversity Processing for Spread Spectrum Communications,” *AEÜ International Journal of Electronics and Communications*, vol. 54, no. 5, pp. 267-276, Nov. 2000.
- Daniel P. Palomar, Marc Price, and Mark Sandler, “Re-optimization of LPC filters for multi-pulse coded excitation,” *IEE Electronics Letters*, vol. 35, N. 13, pp. 1058-1059, ISSN 0013-5194, June 1999.
- Daniel P. Palomar, “Implementación de filtros digitales en tiempo real,” (in Spanish), *Sólo Programadores*, 1997.

### Conference Papers

See appendix.

### Ph.D. Dissertation

- Daniel P. Palomar, “A Unified Framework for Communications through MIMO Channels,” Ph.D. dissertation, Technical University of Catalonia (UPC), Barcelona, Spain, May 27, 2003.

### Electrical Engineering Degree Thesis

- Daniel P. Palomar, “Coding of the Residual-LPC Analysis for High Quality Speech Compression,” Electrical Engineering Degree Thesis, King's College London (supervised by Prof. Mark Sandler) and Technical University of Catalonia (UPC), July 1998.

## Invited Talks and Seminars

- May 2020, **Plenary Talk** “Learning graphs of stocks: From iid to time-varying models,” Graph Signal Processing (GSP) Workshop, Madrid, Spain.
- November 6, 2019, Invited Talk “A Unified Framework for Structured Graph Learning via Spectral Constraints,” Apple Inc., Silicon Valley, California, USA.
- September 2, 2019, Tutorial Presenter “Portfolio Optimization in Financial Markets,” European Signal Processing Conference (EUSIPCO), A Coruña, Spain.
- February 20, 2019, Invited Tutorial Speaker “Signal Processing and Optimization in Financial Engineering,” Eurocast 2019, Las Palmas de Gran Canaria, Spain.
- December 21, 2018, Invited Talk “Imputation of Time Series with Missing Values under Heavy-Tailed AR Model via Stochastic EM,” International Workshop on Mathematical Issues on Information Sciences (MIIS), The Chinese University of Hong Kong, Shenzhen, China.
- November 28, 2018, Invited Talk “Imputation of Time Series with Missing Values under Heavy-Tailed AR Model via Stochastic EM,” Big Data Challenges for Predictive Modeling of Complex Systems, Institute of Mathematical Research, University of Hong Kong, Hong Kong.
- June 14, 2018, Invited Talk “Financial Engineering Playground: Signal Processing, Robust Estimation, Kalman, HMM, Optimization, et Cetera,” Aalto University, Helsinki, Finland.
- June 11, 2018, **Plenary Talk** “Financial Engineering Playground: Signal Processing, Robust Estimation, Kalman, HMM, Optimization, et Cetera,” IEEE Statistical Signal Processing Workshop (SSP), Freiburg, Germany.
- December 11, 2017, **Plenary Talk** “A Signal Processing and Optimization Perspective on Financial Engineering,” IEEE Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP), Curaçao, Dutch Antilles.
- November 15, 2017, Invited Talk “Sparse Portfolios for High-Dimensional Financial Index Tracking,” dbAccess Global Quant Conference, Deutsche Bank, Hong Kong.
- March 5, 2017, Tutorial “A Signal Processing Perspective on Financial Engineering,” IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), New Orleans, USA.
- March 20, 2016, Tutorial “A Signal Processing Perspective on Financial Engineering,” IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Shanghai, China.
- January 8, 2015, Invited Talk “Regularized Robust Estimation of Mean and Covariance Matrix under Heavy Tails and Outliers,” IAS Program on Statistics and Computational Interface to Big Data, IAS-HKUST, Hong Kong.
- July 31, 2014, Invited Talk “Regularized Robust Estimation of Mean and Covariance Matrix under Heavy Tails and Outliers,” Workshop on Complex Systems Modeling and Estimation Challenges in Big Data (CSM-2014), ISM, Tokyo, Japan.
- May 23, 2013, **Keynote Speech** “From Wireless Communications to Financial Engineering,” Workshop on Signal Proc. And Optimization for Wireless Communications: In Memory of Are Hjørungnes, NTNU, Trondheim, Norway.
- December 21, 2012, Invited Talk “Design of Cognitive Radio Systems Under Temperature-Interference Constraints: A Variational Inequality Approach,” Workshop on Advanced Wireless Comm. Technologies and Robust Networks, Sendai, Japan.
- July 19, 2012, Invited Talk “Design of Cognitive Radio Systems Under Temperature-Interference Constraints: A Variational Inequality Approach,” Workshop on Advances in Wireless Communications (AWWC'12), Univ. of Electronic Science and Technology of China (UESTC), Chengdu, China. (Organized by Geoffrey Li and Shaoqian Li.)
- July 16, 2012, Invited Talk “Design of Cognitive Radio Systems Under Temperature-Interference Constraints: A Variational Inequality Approach,” Workshop on Advances in Wireless Communications (AWWC'12), Southeast Univ., Nanjing, China. (Organized by Zhi Ding and Xiaohu You.)

- July 11, 2012, Invited Talk “The Ubiquitous Variational Inequality Theory: From Wireless Communications to Smart Grids and Financial Systems,” International Workshop on Mathematical Issues in Information Sciences (MIIS'12), Xi'an, China. (Organized by Tom Luo and Hong Wei Liu.)
- July 8, 2012, Invited Tutorial “Variational Inequality Theory: A Mathematical Framework for Multiuser Communication Systems and Signal Processing,” International Workshop on Mathematical Issues in Information Sciences (MIIS'12), Xi'an, China. (Organized by Tom Luo and Hong Wei Liu.)
- May 1, 2012, “From Wireless Communications to Financial Engineering: Money Equals Power,” Dept. EE, SUNY at Buffalo, NY, USA.
- March 15, 2012, “From Wireless Communications to Financial Engineering,” Dept. EE, Tsinghua University, Beijing, China.
- May 22, 2011, Tutorial “Variational Inequality (VI) Theory: A Mathematical Framework for Multiuser Communication Systems and Signal Processing,” IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Prague, Czech Republic.
- March 17, 2011, Invited Tutorial “Convex Optimization, Game Theory, and Variational Inequality Theory in Multiuser Communication Systems,” IEEE Winter School of Information Theory, Universitat Pompeu Fabra (UPF), Barcelona, Spain.
- December 1, 2010, Invited Talk “Design of Cognitive Radio Systems Under Temperature-Interference Constraints: A Variational Inequality Approach,” Workshop on Applications of Optimization in Science and Engineering, Institute for Pure and Applied Mathematics (IPAM), UCLA, LA, USA.
- August 23, 2010, Invited Tutorial “Convex Optimization, Game Theory, and Variational Inequality Theory in Multiuser Communication Systems,” European Signal Processing Conference (EUSIPCO), Aalborg, Denmark.
- March 12, 2010, Invited Talk “Design of Cognitive Radio Systems Under Temperature-Interference Constraints: A Variational Inequality Approach,” Workshop on Distributed Decision-Making and Control, LCCC, Lunds University, Sweden.
- January 22, 2010, “Primal and Dual Perspectives of Rank-Constrained Semidefinite Programming with Applications to Optimal Beamforming,” Dept. IESE, Univ. of Illinois at Urbana-Champaign (UIUC), IL, USA.
- January 22, 2010, “Rank-Constrained Separable Semidefinite Programming with Applications to Optimal Beamforming,” Dept. ECE, Univ. of Illinois at Urbana-Champaign (UIUC), IL, USA.
- June 27, 2009, “Rank-Constrained Separable Semidefinite Programming with Applications to Optimal Beamforming,” Distinguished Seminar Series, Yonsei University, Seoul, Korea.
- June 18, 2009, “Rank-Constrained Separable Semidefinite Programming with Applications to Optimal Beamforming,” Università di Pisa, Pisa, Italy. (in Italian)
- June 16, 2009, “Rank-Constrained Separable Semidefinite Programming with Applications to Optimal Beamforming,” Università degli Studi di Napoli “Federico II”, Napoli, Italy. (in Italian)
- June 15, 2009, “Rank-Constrained Separable Semidefinite Programming with Applications to Optimal Beamforming,” University of Rome “La Sapienza”, Rome, Italy. (in Italian)
- April 20, 2009, Tutorial at ICASSP'09 “A Unified Design Framework for Non-Linear MIMO Transceivers Using Majorization Theory,” Taipei, Taiwan. (Co-lectured with Michael Botros Shenouda and Tim Davidson.)
- April 11, 2009, Invited Talk “Connections Between Information Theory and Estimation Theory in the Vector Case,” Princeton University, Princeton, NJ, USA.
- February 6, 2009, **Keynote Talk** “MIMO Transceiver Design: from Signal Processing to Information Theory,” Australian Communication Theory Workshop (AusCTW2009), New South Wales, Australia.
- December 19-21, 2008, 18-hour Course on “Convex Optimization for Wireless Communications and Signal Processing,” National Chiao Tung Univ., Hsinchu, Taiwan. (Co-taught with Ken Ma.)
- July 8, 2008, **Plenary Talk** “MIMO Transceiver Design: from Signal Processing to Information Theory,” IEEE Workshop on Signal Proc. Advances in Wireless Comm. (SPAWC).

- June 19, 2008, “MIMO Transceiver Design: from Signal Processing to Information Theory,” ECE Seminar, HKUST, Hong Kong.
- January 28, 2008, “Decision-Feedback MIMO Transceiver Design via Majorization Theory,” Workshop on Information Theory and Applications (ITA), UCSD, San Diego, CA, USA.
- January 24, 2008, “MIMO Transceiver Design via Majorization Theory: From Linear to DF Schemes,” ISS Seminar, Princeton University, Princeton, NJ, USA.
- January 23, 2008, “MIMO Transceiver Design via Majorization Theory: From Linear to DF Schemes,” Winlab, Rutgers University, New Brunswick, NJ, USA.
- December 19, 2007, “MIMO Transceiver Design via Majorization Theory,” Workshop on Optimization and Signal Processing, CUHK, Hong Kong.
- January 22, 2007, “Waterfillings, Waterfillings, and Waterfillings: From Single-User to Multiuser,” ISS Seminar, Princeton University, Princeton, NJ, USA.
- January 19, 2007, “Waterfillings, Waterfillings, and Waterfillings: From Single-User to Multiuser,” Columbia University, New York City, NY, USA.
- January 18, 2007, “Waterfillings, Waterfillings, and Waterfillings: From Single-User to Multiuser,” Winlab, Rutgers University, New Brunswick, NJ, USA.
- April 12, 2006, “Design of MIMO Communication Systems: A Marriage of Majorization Theory and Convex Optimization Theory,” University of California – Los Angeles, Los Angeles, CA, USA.
- March 28, 2006, “Design of MIMO Communication Systems: A Marriage of Majorization Theory and Convex Optimization Theory,” Ohio State University, Columbus, OH, USA.
- March 23, 2006, “Design of Wireless MIMO Systems: A Marriage of Majorization Theory and Convex Optimization Theory,” Washington University in St. Louis, St. Louis, MO, USA.
- March 13, 2006, “Linear Transceivers for MIMO Channels: A Marriage of Majorization Theory and Convex Optimization Theory,” University of Delaware, Newark, DE, USA.
- March 8, 2006, “Signal Processing for MIMO Communication Systems: A Marriage of Majorization Theory and Convex Optimization Theory,” University of Wisconsin-Madison, MA, USA.
- March 6, 2006, “Connections Between Information Theory and Estimation Theory,” Queen’s University, Kingston, Ontario, Canada.
- February 24, 2006, “Signal Processing for MIMO Channels: A Marriage of Majorization Theory and Convex Optimization Theory,” University of Connecticut, Storrs, CT, USA.
- February 3, 2006, “Linear Transceivers for MIMO Channels: A Marriage of Majorization Theory and Convex Optimization Theory,” Drexel University, Philadelphia, PA, USA.
- January 20, 2006, “Signal Processing for MIMO Channels: A Marriage of Majorization Theory and Convex Optimization Theory,” Hong Kong University of Science and Technology (HKUST), Hong Kong, China.
- November 14, 2005, “Design of Linear Transceivers for MIMO Channels: A Unified Framework for Convex Optimization,” Winlab, Rutgers University, New Brunswick, NJ, USA.
- November 1, 2005, “Design of Linear Transceivers for MIMO Channels: A Unified Framework for Convex Optimization,” Bell Labs, Lucent Technologies, Holmdel, NJ, USA.
- October 6, 2005, “Design of Linear Transceivers for MIMO Channels: A Unified Framework for Convex Optimization,” ISS Seminar, Princeton University, Princeton, NJ, USA.
- March 5, 2004, “Minimum BER Linear Transceivers for MIMO Channels via Primal Decomposition,” Dept. of Signal Theory and Communications, Technical University of Catalonia (UPC), Barcelona, Spain.
- December 5, 2003, “A Unified Framework for Linear Transceiver Design in MIMO Communication Systems,” INFOCOM Department, University of Rome “La Sapienza”, Rome, Italy.
- November 17-19, 2003, “A Primer on Convex Optimization Theory,” as part of a Ph.D. course, Dept. of Signal Theory and Communications, Technical University of Catalonia (UPC), Barcelona, Spain.

- November 11, 2003, “Minimum BER Linear Transceivers for MIMO Channels,” Dept. of Signals, Sensors & Systems, Royal Institute of Technology (KTH), Stockholm, Sweden.
- October 22, 2003, “A Unified Framework to Design Linear Transceivers for Communications through MIMO Channels,” Ericsson, Stockholm, Sweden.
- August 28, 2003, “A Unified Framework for Communications through MIMO Channels,” Dept. of Signals, Sensors & Systems, Royal Institute of Technology (KTH), Stockholm, Sweden.
- October 30, 2002, “Optimum Joint Transmit-Receive Linear Processing for Vectored DSL Transmission with QoS Requirements,” Dept. of Electrical Engineering, Stanford University, Stanford, CA, USA.

## Appendix: Conference Papers

### Conference Papers (3/120) – 2021

- Jiayi Ying, José Vinícius de M. Cardoso, and Daniel P. Palomar, “A Fast Algorithm for Graph Learning under Attractive Gaussian Markov Random Fields,” in *Proc. of the 55th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, 2021.
- Frédéric Pascal, Esa Ollila, and Daniel P. Palomar, “Improved estimation of the degree of freedom parameter of multivariate t-distribution,” in *Proc. European Signal Processing Conference (EUSIPCO)*, Dublin, Ireland, Aug. 23-27, 2021.
- Rui Zhou, Junyan Liu, Sandeep Kumar, and Daniel P. Palomar, “Parameter Estimation for Student’s t VAR Model with Missing Data,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Toronto, Ontario, Canada, June 6-11, 2021.
- Jiayi Ying, José Vinícius de M. Cardoso, and Daniel P. Palomar, “Minimax Estimation of Laplacian Constrained Precision Matrices,” *International Conference on Artificial Intelligence and Statistics (AISTATS)*, April 2021.

### Conference Papers (5/117) – 2020

- José Vinícius de M. Cardoso and Daniel P. Palomar, “Learning Undirected Graphs in Financial Markets,” in *Proc. of the 54th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, 2020.
- Jiayi Ying, José Vinícius de M. Cardoso, and Daniel P. Palomar, “Nonconvex Sparse Graph Learning under Laplacian Constrained Graphical Model,” *Advances in Neural Information Processing Systems (NeurIPS)*, Dec. 2020.
- Rui Zhou and Daniel P. Palomar, “A theoretical basis for practitioners heuristic 1/N and quintile portfolio,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Barcelona, Catalonia, Spain, May 4-8, 2020.
- Esa Ollila, Daniel P. Palomar, and Frédéric Pascal, “M-estimators of scatter with eigenvalue shrinkage,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Barcelona, Catalonia, Spain, May 4-8, 2020.
- Rui Zhou, Junyan Liu, Sandeep Kumar, and Daniel P. Palomar, “Robust Factor Analysis Parameter Estimation,” in *Computer Aided Systems Theory – EUROCAST 2019*, Springer International Publishing, 2020, pp. 3–11.

### Conference Papers (7/113) – 2019

- Rui Zhou and Daniel P. Palomar, “Accelerating the skew t parameter estimation,” in *Proc. International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, Guadeloupe, French West Indies, Dec. 15-18, 2019.
- Sandeep Kumar, Jiayi Ying Ying, José Vinícius de M. Cardoso, and Daniel P. Palomar, “Structured Graph Learning Via Laplacian Spectral Constraints,” in *Proc. Advances in Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada, Dec. 2019.
- Ziping Zhao and Daniel P. Palomar, “Large-Scale Regularized Portfolio Selection via Convex Optimization,” in *Proc. IEEE GlobalSIP*, Ottawa, Canada, Nov. 11-14, 2019.
- Sandeep Kumar, Jiayi Ying Ying, José Vinícius de M. Cardoso, and Daniel P. Palomar, “Bipartite Structured Gaussian Graphical Modeling via Adjacency Spectral Priors,” in *Proc. of the 53rd Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, Nov. 3-6, 2019.
- Junyan Liu, Sandeep Kumar, and Daniel P. Palomar, “Parameter Estimation of Heavy-Tailed AR(p) Model from Incomplete Data,” in *Proc. European Signal Processing Conference (EUSIPCO)*, A Coruña, Spain, Sept. 2-6, 2019.

- Rui Zhou, Ziping Zhao, and Daniel P. Palomar, “Unified Framework for Minimax MIMO Transmit Beampattern Matching under Waveform Constraints,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Brighton, UK, May 12-17, 2019.
- Rui Zhou, Junyan Liu, Sandeep Kumar, and Daniel P. Palomar, “Robust Factor Analysis Parameters Estimation,” in *Proc. Eurocast*, Las Palmas de Gran Canaria, Spain, Feb. 17-22, 2019.

#### Conference Papers (6/106) – 2018

- Ziping Zhao, Songtao Lu, Mingyi Hong, and Daniel P. Palomar, “Distributed optimization for Generalized Phase Retrieval Over Networks,” in *Proc. of the 52nd Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, Oct. 28-31, 2018.
- Yi Jiang, Daniel P. Palomar, and Mahesh K. Varanasi, “Decision Feedback Based Transceiver Optimization for MIMO Inter-Symbol Interference Channels,” in *Proc. International Symposium on Mathematical Theory of Networks and Systems (MTNS)*, Hong Kong, July 16-20, 2018.
- Ziping Zhao and Daniel P. Palomar, “Sparse reduced rank regression with nonconvex regularization,” in *Proc. IEEE Statistical Signal Processing Workshop (SSP)*, Freiburg, Germany, June 10-13, 2018.
- Ziping Zhao, Rui Zhou, Zhongju Wang, and Daniel P. Palomar, “Optimal portfolio design for statistical arbitrage in finance,” in *Proc. IEEE Statistical Signal Processing Workshop (SSP)*, Freiburg, Germany, June 10-13, 2018.
- Ziping Zhao and Daniel P. Palomar, “MIMO Transmit Beampattern Matching under Waveform Constraints,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Calgary, Alberta, Canada, April 15-20, 2018.
- Junyan Liu, Sandeep Kumar, and Daniel P. Palomar, “Parameter Estimation of Heavy-Tailed Random Walk Model from Incomplete Data,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Calgary, Alberta, Canada, April 15-20, 2018.

#### Conference Papers (4/100) – 2017

- Ziping Zhao and Daniel P. Palomar, “Robust Maximum Likelihood Estimation of Sparse Vector Error Correction Model,” in *Proc. IEEE GlobalSIP*, Montreal, Canada, Nov. 14-16, 2017.
- Junyan Liu and Daniel P. Palomar, “Robust Estimation of Mean and Covariance Matrix for Incomplete Data in Financial Applications,” in *Proc. IEEE GlobalSIP*, Montreal, Canada, Nov. 14-16, 2017.
- Linlong Wu, Prabhu Babu, and Daniel P. Palomar, “A Fast Algorithm for Joint Design of Transmit Waveforms and Receive Filters,” in *Proc. IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Sapporo, Japan, July 3-6, 2017.
- Zhongju Wang, Prabhu Babu, and Daniel P. Palomar, “A Low-Complexity Algorithm for OFDM Phase Noise Estimation,” in *Proc. IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Sapporo, Japan, July 3-6, 2017.

#### Conference Papers (9/96) – 2016

- Arnaud Breloy, Ying Sun, Prabhu Babu, Guillaume Ginolhac, and Daniel P. Palomar, “Robust Rank Constrained Kronecker Covariance Matrix Estimation,” in *Proc. of the 50th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, Nov. 6-9, 2016.
- Ying Sun, Gesualdo Scutari, and Daniel P. Palomar, “Distributed Nonconvex Multiagent Optimization Over Time-Varying Networks,” in *Proc. of the 50th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, Nov. 6-9, 2016.
- Ziping Zhao and Daniel P. Palomar, “Mean-Reverting Portfolio Design via Majorization-Minimization Method,” in *Proc. of the 50th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, Nov. 6-9, 2016.



- Arnaud Breloy, Ying Sun, Prabu Babu, Daniel P. Palomar, "Low-Complexity Algorithms for Low Rank Clutter Parameters Estimation in Radar Systems", in *Proc. European Signal Processing Conference (EUSIPCO)*, Budapest, Hungary, Aug. 29-Sept. 2, 2016.
- Arnaud Breloy, Ying Sun, Prabu Babu, Daniel P. Palomar, Frédéric Pascal, G. Ginolhac, "A robust signal subspace estimator", in *Proc. IEEE Workshop on Statistical Signal Processing (SSP)*, Mallorca, Spain, June 26-29, 2016.
- Yiyong Feng and Daniel P. Palomar, "Portfolio Optimization with Asset Selection and Risk Parity Control," in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Shanghai, China, March 20-25, 2016.
- Konstantinos Benidis, Ying Sun, Prabhu Babu, and Daniel P. Palomar, "Orthogonal Sparse Eigenvectors: A Procrustes Problem," in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Shanghai, China, March 20-25, 2016.
- Zhongju Wang, Prabhu Babu, and Daniel P. Palomar, "Optimal Design of Constant-Modulus Channel Training Sequences," in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Shanghai, China, March 20-25, 2016.
- Junxiao Song, Prabhu Babu, and Daniel P. Palomar, "Sequence Design to Minimize the Peak Sidelobe Level," in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Shanghai, China, March 20-25, 2016.

#### Conference Papers (5/87) – 2015

- Licheng Zhao, Prabhu Babu, and Daniel P. Palomar, "Robust Low-Rank Optimization for Large Scale Problems," in *Proc. of the 49th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, Nov. 8-11, 2015.
- Tianyu Qiu, Prabhu Babu, and Daniel P. Palomar, "PRIME: Phase Retrieval via Majorization-Minimization Technique," in *Proc. of the 49th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, Nov. 8-11, 2015.
- Yiyong Feng and Daniel P. Palomar, "Linear Support Vector Machines with Normalizations," in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Brisbane, Australia, April 19-24, 2015.
- Junxiao Song, Prabhu Babu, and Daniel P. Palomar, "Optimization Methods for Sequence Design with Low Autocorrelation Sidelobes," in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Brisbane, Australia, April 19-24, 2015.
- Ying Sun, Prabhu Babu, and Daniel P. Palomar, "Robust Estimation of Structured Covariance Matrix for Heavy-Tailed Distributions," in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Brisbane, Australia, April 19-24, 2015.

#### Conference Papers (4/82) – 2014

- Yang Yang, Mengyi Zhang, Marius Pesavento, and Daniel P. Palomar, "An Online Parallel Algorithm for Recursive Estimation of Sparse Signals," in *Proc. of the 48th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, Nov. 2-5, 2014.
- Junxiao Song, Prabhu Babu, and Daniel P. Palomar, "A Fast Algorithm for Sparse Generalized Eigenvalue Problem," in *Proc. of the 48th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, Nov. 2-5, 2014.
- Ying Sun, Prabhu Babu, and Daniel P. Palomar, "Regularized Robust Estimation of Mean and Covariance Matrix under Heavy Tails and Outliers," in *Proc. IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM)*, A Coruña, Spain, June 22-25, 2014.
- Antonio A. D'Amico, Luca Sanguinetti, and Daniel P. Palomar, "Convex Separable Problems with Linear and Box Constraints," in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Florence, Italy, May 4-9, 2014.

### Conference Papers (6/78) – 2013

- Yiyong Feng, Daniel P. Palomar, and Francisco Rubio, “Robust Order Execution Under Box Uncertainty Sets,” in *Proc. of the 47th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, USA, Nov. 3-6, 2013.
- Yang Yang, Gesualdo Scutari, and Daniel P. Palomar, “Parallel Stochastic Decomposition Algorithms for Multiuser Systems,” in *Proc. 14<sup>th</sup> IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC 2013)*, Darmstadt, Germany, June 16-19, 2013.
- Gesualdo Scutari, Francisco Facchinei, Peiran Song, Daniel P. Palomar, and Jong-Shi Pang, “Decomposition by Partial Linearization in Multiuser Systems,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, May 26-31, 2013.
- Yang Yang, Peiran Song, Gesualdo Scutari, Daniel P. Palomar, “Robust MIMO Cognitive Radio Systems under Temperature Interference Constraints,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, May 26-31, 2013.
- Italo Atzeni, Luis G. Ordóñez, Gesualdo Scutari, Daniel P. Palomar, and Javier R. Fonollosa, “Cooperative Day-Ahead Bidding Strategies for Demand-Side Expected Cost Minimization,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, May 26-31, 2013.
- Mengyi Zhang, Francisco Rubio, Daniel P. Palomar, and Xavi Mestre, “Robust Adaptive Beamforming with Imprecise Steering Vector and Finite Sample,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, May 26-31, 2013.

### Conference Papers (6/72) – 2012

- Italo Atzeni, Luis G. Ordóñez, Gesualdo Scutari, Daniel P. Palomar, and Javier R. Fonollosa, “Day-Ahead Bidding Strategies for Demand-Side Expected Cost Minimization,” in *Proc. IEEE SmartGridComm*, Tainan City, Taiwan, Nov. 5-8, 2012.
- Yiyong Feng, Francisco Rubio, and Daniel P. Palomar, “Optimal Order Execution for Algorithmic Trading: A CVaR Approach,” in *Proc. 13<sup>th</sup> IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC 2012)*, Istanbul, Turkey, June 17-20, 2012.
- Benjamín Béjar, Santiago Zazo, and Daniel P. Palomar, “Lifetime Maximization for Beamforming Applications in Wireless Sensor Networks,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Tokyo, Japan, March 25-30, 2012.
- Mengyi Zhang, Francisco Rubio, and Daniel P. Palomar, “Calibration of High-Dimensional Precision Matrices under Quadratic Loss,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Tokyo, Japan, March 25-30, 2012.
- Jiaheng Wang, Mats Bengtsson, Bjorn Ottersten, and Daniel P. Palomar, “Robust Maximin MIMO Precoding for Arbitrary Convex Uncertainty Sets,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Tokyo, Japan, March 25-30, 2012.
- Yongwei Huang, Daniel P. Palomar, and Shuzhong Zhang, “Lorentz-Positive Maps with Applications to Robust MISO Downlink Beamforming,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Tokyo, Japan, March 25-30, 2012.

### Conference Papers (7/66) – 2011

- G. Scutari, D. P. Palomar, F. Facchinei, and J.-S. Pang, “Distributed dynamic pricing for MIMO interfering multiuser systems: A unified approach,” in *Proc. 5th International Conference on Network Games, Control and Optimization (NetGCooP)*, pp. 1–5, 2011.
- Miquel Payaró, Maria Gregori, and Daniel P. Palomar, “Yet Another Entropy Power Inequality with an Application,” in *Proc. IEEE International Conference on Wireless Communications and Signal Processing (WCSP’11)*, Nanjing, China, Nov. 9-11, 2011.

- Francisco Rubio, Daniel P. Palomar, and Xavier Mestre, “A Unified Asymptotic Approach to Risk Estimation and Analysis of Large Dimensional Portfolios,” in *Proc. International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, San Juan, Puerto Rico, Dec. 13-16, 2011.
- Luis G. Ordóñez, Daniel P. Palomar, and Javier R. Fonollosa, “DMA Tradeoff for the MIMO Static Half-Duplex Relay,” in *Proc. IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, San Francisco, CA, USA, June 26-29, 2011.
- Luis G. Ordóñez, Daniel P. Palomar, and Javier R. Fonollosa, “Fundamental Diversity, Multiplexing, and Array Gain Tradeoff Under Different MIMO Channel Models,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Prague, Czech Republic, May 22-27, 2011.
- Javier Vía, Daniel P. Palomar, Luis Vielva, and Ignacio Santamaría, “Maximum Likelihood ICA of Quaternion Gaussian Vector,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Prague, Czech Republic, May 22-27, 2011.
- Yang Yang, Francisco Rubio, Gesualdo Scutari, and Daniel P. Palomar, “Multi-Portfolio Optimization: A Potential Game Approach,” in *Proc. International ICST Conference on Game Theory for Networks*, Shanghai, China, April 16-18, 2011.

### Conference Papers (5/59) – 2010

- Luis G. Ordóñez, Daniel P. Palomar, and Javier R. Fonollosa, “On the Diversity, Multiplexing, and Array Gain Tradeoff in MIMO Channels,” in *Proc. IEEE International Symposium on Information Theory (ISIT'10)*, Austin, TX, USA, June 13-18, 2010.
- Ronit Bustin, Miquel Payaró, Daniel P. Palomar, and Shlomo Shamai, “On MMSE Properties and I-MMSE Implications in Parallel MIMO Gaussian Channels,” in *Proc. IEEE International Symposium on Information Theory (ISIT'10)*, Austin, TX, USA, June 13-18, 2010.
- Jiaheng Wang, Gesualdo Scutari, and Daniel P. Palomar, “Robust Cognitive Radio via Game Theory,” in *Proc. IEEE International Symposium on Information Theory (ISIT'10)*, Austin, TX, USA, June 13-18, 2010.
- Yongwei Huang and Daniel P. Palomar, “A Dual Perspective on Separable Semidefinite Programming with Applications to Optimal Beamforming,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Dallas, TX, USA, March 14-19, 2010.
- Jong-Shi Pang, Gesualdo Scutari, Daniel P. Palomar, and Francisco Facchinei, “Design of Cognitive Radio Systems Under Temperature-Interference Constraints: A Variational Inequality Approach,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Dallas, TX, USA, March 14-19, 2010.

### Conference Papers (5/54) – 2009

- Yongwei Huang and Daniel P. Palomar, “Rank-Constrained Separable Semidefinite Programming for Optimal Beamforming Design,” in *Proc. IEEE International Symposium on Information Theory (ISIT'09)*, Seoul, Korea, June 28 - July 3, 2009.
- Miquel Payaró and Daniel P. Palomar, “On optimal precoding in linear vector Gaussian channels with arbitrary input distribution,” in *Proc. IEEE International Symposium on Information Theory (ISIT'09)*, Seoul, Korea, June 28 - July 3, 2009.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Competitive Optimization of Cognitive Radio MIMO Systems via Game Theory,” in *Proc. International Conference on Game Theory for Networks (GameNets 2009)*, Boğaziçi University, Istanbul, Turkey, May 13-15, 2009.
- Svante Bergman, Daniel P. Palomar, and Björn Ottersten, “Optimal Bit Loading for MIMO Systems with Decision Feedback Detection,” in *Proc. IEEE Vehicular Technology Conference (VTC2009-Spring)*, Barcelona, Spain, April 26-29, 2009.
- Jiaheng Wang and Daniel P. Palomar, “Maximin Robust Design for MIMO Communication Systems Against Imperfect CSIT,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Taipei, Taiwan, April 19-24, 2009.

### Conference Papers (7/49) – 2008

- Are Hjørungnes and Daniel P. Palomar, “Finding Patterned Complex-Valued Matrix Derivatives by Using Manifolds,” in *Proc. IEEE First Symposium on Applied Sciences in Biomedical and Communication Technologies, (ISABEL 2008)*, Aalborg, Denmark, Oct. 2008.
- Are Hjørungnes and Daniel P. Palomar, “Patterned Complex-Valued Matrix Derivatives,” in *Proc. IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM)*, Darmstadt, Germany, July 21-23, 2008.
- Eduard Calvo, Daniel P. Palomar, Javier R. Fonollosa, and Josep Vidal, “The Computation of the Capacity Region of the Discrete Degraded BC is a Nonconvex DC Problem,” in *Proc. IEEE International Symposium on Information Theory (ISIT)*, Toronto, Canada, July 6-11, 2008.
- Miquel Payaró and Daniel P. Palomar, “A Multivariate Generalization of Costa’s Entropy Power Inequality,” in *Proc. IEEE International Symposium on Information Theory (ISIT)*, Toronto, Canada, July 6-11, 2008.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “MIMO Cognitive Radio: A Game-Theoretical Approach,” in *Proc. 9<sup>th</sup> IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC 2008)*, Recife, Brazil, July 7-9, 2008.
- Luis García-Ordoñez, Daniel P. Palomar, and Javier R. Fonollosa, “Ordered Eigenvalues of a General Class of Hermitian Random Matrices and Performance Analysis of MIMO Systems,” in *Proc. IEEE 2008 International Conference on Communications (ICC’03)*, Beijing, China, May 19-23, 2008.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Competitive Design of Multiuser MIMO Interference Systems Based on Game Theory: A Unified Framework,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Las Vegas, NV, USA, March 30-April 4, 2008.

### Conference Papers (11/42) – 2007

- Jonathan Duplicy, Daniel P. Palomar, and Luc Vandendorpe, “Adaptive Orthogonal Beamforming for the MIMO Broadcast Channel,” in *Proc. Second International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP 2007)*, St. Thomas, Virgin Islands, USA, Dec. 12-14, 2007.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Optimal Decentralized Linear Precoding for Wideband Non-Cooperative Interference Systems Based on Game Theory,” in *Proc. Second International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP 2007)*, St. Thomas, Virgin Islands, USA, Dec. 12-14, 2007.
- Yi Jiang, Mahesh K. Varanasi, and Daniel P. Palomar, “Decision Feedback Based Transceiver Optimization for MIMO Intersymbol Interference Channels,” in *Proc. 41st Asilomar Conference on Signals, Systems & Computers*, Pacific Grove, CA, USA, Nov. 4-7, 2007.
- Xi Zhang, Daniel P. Palomar, and Björn Ottersten, “Robust MAC MIMO Transceiver Design with Partial CSIT and CSIR,” in *Proc. 41st Asilomar Conference on Signals, Systems & Computers*, Pacific Grove, CA, USA, Nov. 4-7, 2007.
- Eduard Calvo, Daniel P. Palomar, Javier R. Fonollosa, and Josep Vidal, “The Computation of the Capacity Region of the Discrete MAC is a Rank-One Non-Convex Optimization Problem,” in *Proc. IEEE International Symposium on Information Theory (ISIT)*, Nice, France, June 24-29, 2007.
- Chee Wei Tan, Daniel P. Palomar, and Mung Chiang, “Exploiting Hidden Convexity for Flexible and Robust Resource Allocation in Cellular Networks,” in *Proc. IEEE Infocom*, Anchorage, Alaska, USA, May 6-12, 2007.
- Luis G. Ordoñez, Daniel P. Palomar, Alba Pagès-Zamora, and Javier R. Fonollosa, “On Equal Constellation Minimum BER Linear MIMO Transceivers,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Honolulu, Hawaii, USA, April 15-20, 2007.
- Are Hjørungnes, David Gesbert, and Daniel P. Palomar, “Unified Theory of Complex-Valued Matrix Differentiation,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Honolulu, Hawaii, USA, April 15-20, 2007.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Distributed Totally Asynchronous Iterative Waterfilling for Wideband Interference Channel with Time/Frequency Offset,” in *Proc. IEEE International*

*Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Honolulu, Hawaii, USA, April 15-20, 2007.

- Yi Jiang, Daniel P. Palomar, and Mahesh K. Varanasi, “Precoder Optimization for Nonlinear MIMO Transceiver Based on Arbitrary Cost Function,” in *Proc. Conference on Information Sciences and Systems (CISS 2007)*, The John Hopkins University, Baltimore, MD, March 14-16, 2007.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Asynchronous Iterative Waterfilling for Gaussian Frequency-Selective Interference Channels: A Unified Framework,” in *Proc. Information Theory and Applications (ITA) Workshop*, San Diego, CA, USA, Jan. 29 - Feb. 2, 2007.

### **Conference Papers (7/31) – 2006**

- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Simultaneous Iterative Water-Filling for Gaussian Frequency-Selective Interference Channels,” in *Proc. IEEE International Symposium on Information Theory (ISIT)*, Seattle, WA, USA, July 9-14, 2006.
- Gesualdo Scutari, Daniel P. Palomar, and Sergio Barbarossa, “Asynchronous Iterative Water-Filling for Gaussian Frequency-Selective Interference Channels: A Unified Framework,” in *Proc. IEEE Workshop on Signal Proc. Advances in Wireless Commun. (SPAWC 2006)*, Cannes, France, July 2-5, 2006.
- Xi Zhang, Daniel P. Palomar, and Björn Ottersten, “Robust Design of Linear MIMO Transceivers under Channel Uncertainty,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Toulouse, France, May 14-19, 2006.
- Gesualdo Scutari, Sergio Barbarossa, and Daniel P. Palomar, “Potential Games: A Framework for Vector Power Control Problems with Coupled Constraints,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Toulouse, France, May 14-19, 2006.

#### **☺ Best Student Paper Award at ICASSP**

- Chee Wei Tan, Daniel P. Palomar, and Mung Chiang, “Distributed Optimization of Coupled Systems with Applications to Network Utility Maximization,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Toulouse, France, May 14-19, 2006.
- Daniel P. Palomar and Mung Chiang, “Alternative Decompositions for Distributed Maximization of Network Utility: Framework and Applications,” in *Proc. IEEE Infocom*, Barcelona, Spain, April 23-29, 2006.
- Daniel P. Palomar and Sergio Verdú, “Lautum Information,” in *Proc. IEEE Information Theory Workshop (ITW)*, Punta del Este, Uruguay, March 13-17, 2006.

### **Conference Papers (6/24) – 2005**

- Daniel P. Palomar and Mung Chiang, “Alternative Decompositions and Distributed Algorithms for Network Utility Maximization,” in *Proc. Globecom*, St. Louis, MO, USA, Nov. 28 – Dec. 2, 2005.
- Chee Wei Tan, Daniel P. Palomar, and Mung Chiang, “Solving Nonconvex Power Control Problems in Wireless Networks: Low SIR Regime and Distributed Algorithms,” in *Proc. Globecom*, St. Louis, MO, USA, Nov. 28 – Dec. 2, 2005.
- Xi Zhang, Daniel P. Palomar, and Björn Ottersten, “Robust Design of Linear MIMO Transceivers for Low SNR,” in *Proc. 39th Asilomar Conference on Signals, Systems & Computers*, Pacific Grove, CA, USA, Oct. 30 - Nov. 2, 2005.
- Daniel P. Palomar and Sergio Verdú, “Estimation-Theoretic Representation of Mutual Information,” in *Proc. 43th Annual Allerton Conference on Communication, Control, and Computing*, Allerton House, Monticello, IL, USA, Sept. 28-30, 2005.
- Daniel P. Palomar and Sergio Verdú, “Gradient of Mutual Information in Linear Vector Gaussian Channels,” in *Proc. IEEE 2005 International Symposium on Information Theory (ISIT’05)*, Adelaide, Australia, Sept. 4-9, 2005.
- Luis García-Ordoñez, Daniel P. Palomar, Alba Pagès-Zamora, and Javier R. Fonollosa, “Analytical BER Performance in Spatial Multiplexing MIMO Systems,” in *Proc. IEEE Workshop on Signal Proc. Advances in Wireless Commun. (SPAWC 2005)*, New York, USA, June 5-8, 2005.

### Conference Papers (1/18) – 2004

- Daniel P. Palomar, Adrian Agustín, Olga Muñoz, and Josep Vidal, “Decode-and-Forward Protocol for Cooperative Diversity in Multi-Antenna Wireless Networks,” in *Proc. Conference on Information Sciences and Systems (CISS 2004)*, Princeton University, Princeton, NJ, March 17-19, 2004.

### Conference Papers (3/17) – 2003

- Diego Bartolomé, Daniel P. Palomar, and Ana I. Pérez-Neira, “Real-Time Scheduling for Wireless Multiuser MISO Systems under different Fairness Criteria,” in *Proc. IEEE Seventh International Symposium on Signal Processing and its Applications (ISSPA’03)*, Paris, France, July 1-4, 2003.
- Daniel P. Palomar, John M. Cioffi, and Miguel Angel Lagunas, “Uniform Power Allocation in MIMO Channels: A Game-Theoretic Approach,” in *Proc. IEEE 2003 International Symposium on Information Theory (ISIT’03)*, p. 271, Pacifico, Yokohama, Japan, June 29-July 4, 2003.
- Daniel P. Palomar, John M. Cioffi, Miguel Angel Lagunas, and Antonio Pascual, “Convex Optimization Theory Applied to Joint Beamforming Design in Multicarrier MIMO Channels,” in *Proc. IEEE 2003 International Conference on Communications (ICC’03)*, vol. 4, pp. 2974-2978, Anchorage, AK, May 11-15, 2003.

### Conference Papers (3/14) – 2002

- Daniel P. Palomar, Miguel Angel Lagunas, and John M. Cioffi, “On the Optimal Structure of Transmit-Receive Linear Processing for MIMO Channels,” in *Proc. 40th Annual Allerton Conference on Communication, Control, and Computing*, pp. 683-692, Allerton House, Monticello, IL, Oct. 2-4, 2002.
- Daniel P. Palomar, Miguel Angel Lagunas, and John M. Cioffi, “Optimum Joint Transmit-Receive Linear Processing for Vectored DSL Transmission with QoS Requirements,” in *Proc. 36th Asilomar Conference on Signals, Systems & Computers*, pp. 388-392, Pacific Grove, CA, Nov. 3-6, 2002.
- Antonio Pascual Iserte, Ana I. Pérez-Neira, Daniel P. Palomar, and Miguel Angel Lagunas, “Power Allocation Techniques for Joint Beamforming in OFDM-MIMO Channels,” in *Proc. XI European Signal Processing Conference (EUSIPCO 2002)*, Toulouse, France, Sept. 3-6, 2002.

### Conference Papers (4/11) – 2001

- Daniel P. Palomar and Miguel Angel Lagunas, “Capacity of spatially flattened frequency-selective MIMO channels using linear processing techniques in transmission,” in *Proc. 35th IEEE Annual Conference on Information Sciences and Systems (CISS 2001)*, The John Hopkins University, Baltimore, MD, March 21-23, 2001.
- Daniel P. Palomar, Javier R. Fonollosa, and Miguel Angel Lagunas, “Capacity results of spatially correlated frequency-selective MIMO channels in UMTS,” in *Proc. IEEE Vehicular Technology Conf. Fall (VTC-Fall 2001)*, Atlantic City, NJ, Oct. 7-11, 2001.
- Daniel P. Palomar, Miguel Angel Lagunas, Antonio Pascual, and Ana Pérez Neira, “Practical implementation of jointly designed transmit-receive space-time IIR filters,” in *Proc. 6th IEEE International Symposium on Signal Processing and its Applications (ISSPA-2001)*, pp. 521-524, Kuala-Lampur, Malaysia, Aug. 13-16, 2001.
- Daniel P. Palomar, Javier R. Fonollosa, and Miguel Angel Lagunas, “Information-theoretic results for realistic UMTS MIMO channels,” in *Proc. IST Mobile Communication Summit*, Sitges, Barcelona, Spain, Sept. 9-12, 2001.

### Conference Papers (6/7) – 2000

- Daniel P. Palomar, Javier R. Fonollosa, and Miguel Angel Lagunas, “Capacity results on frequency-selective Rayleigh MIMO channels,” in *Proc. IST Mobile Comm. SUMMIT 2000*, pp. 491-496, Galway, Ireland, Oct. 1-4, 2000.
- Daniel P. Palomar, Javier R. Fonollosa, and Miguel Angel Lagunas, “MMSE Joint Detection in frequency-selective wireless communication channels for DS-CDMA systems,” in *Proc. IEEE Sixth International*

*Symposium on Spread Spectrum Techniques & Applications (ISSSTA 2000)*, vol. 2, pp. 530-534, Parsippany, NJ, Sept. 6-8, 2000.

- Daniel P. Palomar and Miguel Angel Lagunas, “Optimum Self-reference Spatial Diversity Processing for FDSS and FH communication systems,” in *Proc. EUSIPCO 2000*, vol. III, Tampere, Finland, Sept. 4-8, 2000.
- Miguel Angel Lagunas, Daniel P. Palomar, and Ana I. Pérez Neira, “Diversidad espacio/tiempo en transmisión-recepción para comunicaciones móviles,” (in Spanish), *URSI-2000*, Zaragoza, Spain, Sept. 2000.
- Daniel P. Palomar and Miguel Angel Lagunas, “Self-reference beamforming for DS-CDMA communication systems,” in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP2000)*, vol. V, pp.3001-3004, Istanbul, Turkey, June 5-9, 2000.
- Daniel P. Palomar, Miguel Angel Lagunas, and Montse Nájar, “Self-reference Spatial Diversity Processing for Spread Spectrum Communications,” in *Proc. of International Symposium on Image/Video Communications over Fixed and Mobile Networks (ISIVC’2000)*, Invited Presentation, vol. 1, pp. 81-96, Rabat, Morocco, April 17-20, 2000.

#### **Conference Papers (1/1) – 1999**

- Daniel P. Palomar and Miguel Angel Lagunas, “Blind beamforming for DS-CDMA systems,” in *Proc. of the Fifth Bayona Workshop on Emerging Technologies in Telecommunications*, pp. 83-87, Bayona, Spain, Sept. 6-8, 1999.