

Dr. Ramón Agüero

CONTACT INFORMATION	University of Cantabria Department of Communications Engineering Edificio Ingeniería de Telecomunicación Plaza de la Ciencia s/n Santander, 39005 - Spain	Work: +34 942 203 916 Fax: +34 942 201 488 eMail: ramon@tmat.unican.es ramon.agueroc@unican.es www: www.tmat.unican.es
EDUCATION	Ph.D, Communications Engineering at University of Cantabria (Spain), March 2008 <ul style="list-style-type: none">• Thesis Topic: <i>Contribution to the performance enhancement over non-conventional wireless access networks</i>• Extraordinary Award (University of Cantabria)• Social Council Award (University of Cantabria)• Best PhD by the Spanish Association of Communication Engineers M.Sc, Telecommunications Engineering at University of Cantabria (Spain), April 2001 <ul style="list-style-type: none">• With honors (1st of 80)• Awarded as the 2nd best graduate in Telecommunications Engineering by the Spanish Ministry of Education• The thesis was awarded as the best M.Sc thesis by the Spanish Association of Communication Engineers	
CURRENT ACADEMIC APPOINTMENTS	Associate Professor , University of Cantabria (Spain) Network Planning and Mobile Communications Laboratory Department of Communications Engineering	September 2010 to present
	Head of the Campus Area , University of Cantabria (Spain) <ul style="list-style-type: none">• Responsible of the IT services of the University of Cantabria campus	May 2015 to present
PREVIOUS ACADEMIC APPOINTMENTS	Head/Director of Communications Engineering Department University of Cantabria Department of Communications Engineering	Oct 2015 to May 2016
	Deputy Director of Communications Engineering Department University of Cantabria Department of Communications Engineering	Jan 2015 to Sep 2015
	Assistant Lecturer , University of Cantabria (Spain) Network Planning and Mobile Communications Laboratory Department of Communications Engineering	2006 to 2010
	Senior Researcher , University of Cantabria (Spain) Network Planning and Mobile Communications Laboratory Department of Communications Engineering	2002 to 2006
CURRENT TEACHING RESPONSIBILITIES	Associate Professor at University of Cantabria , (Spain) <i>Main Instructor in B.Sc courses</i> <ul style="list-style-type: none">• Communication Networks<ul style="list-style-type: none">• Undergraduate course (2nd year) in B.Sc on Telecommunications Engineering• Basic Teletraffic and Network Dimensioning• Syllabus available here• Slides and course materials (Spanish) available here	

- Network Dimensioning and Planning
 - Undergraduate course (3rd year) in B.Sc on Telecommunications Engineering
 - Advanced Teletraffic and Network Dimensioning, Graph Theory
 - Syllabus available [here](#)
 - Slides and course materials (Spanish) available [here](#)

Main Instructor in M.Sc courses

- Network Desing and Operation
 - 1st year course in M.Sc on Telecommunications Engineering
 - Performance analysis, access to shared channels, multiple access, routing, TCP
 - Syllabus available [here](#)
 - Slides and course materials (Spanish) available [here](#)

STUDENT
ADVISING

Johnny Choque

PhD on Communications Engineering, University of Cantabria. *On the contribution to access selection in heterogeneous wireless networks* July 2014. Summa Cum Laude.

David Gómez Fernández

PhD on Communications Engineering, University of Cantabria. *Reliable Communications over Wireless Mesh Networks by means of Network Coding and Multi-Path Techniques*. May 2015. Summa Cum Laude.

José Ángel Irastorza

PhD on Communications Engineering, University of Cantabria. *A distributed management architecture for wireless mesh networks and its application over personal network environments*. February 2016. Summa Cum Laude.

Luis Francisco Diez Fernández

PhD on Communications Engineering, University of Cantabria. October 2017 [expected]

Pablo Garrido Ortiz

PhD on Communications Engineering, University of Cantabria. September 2018 [expected]

BSc and MSc thesis supervision

More than 50 thesis supervised since 2002

PROJECT
EXPERIENCE

Ramón Agüero holds a strong experience in different collaborative research projects, highlighting those belonging to the various IST Frameworks. He has coordinated the participation of University of Cantabria in, at least, 6 of them. In addition he has also taken different responsibility roles: task leader, work-package leader, technical manager. Some of the most recent ones are enumerated below.

Dynamic provisioning of connectivity in high density 5G wireless scenarios, ADVICE

- *Spanish Research Project*
- Project duration: 2016-2018
- Project coordinator: Dr. Ramón Agüero
- Role: Principal researcher, coordinator

Connectivity as a Service: Access for the Internet of the Future, COSAIF

- *Spanish Research Project*
- Project duration: 2012-2016
- Project coordinator: Dr. Ramón Agüero
- Role: Principal researcher, coordinator

Low EMF Exposure Future Networks, LEXNET

- *7th Framework Programme*
- Project duration: 2012-2015
- Project coordinator: Dr. Joe Wiart (Orange)
- Role: work-package leader, coordinated University of Cantabria activities

Cognitive, Cooperative Communications and autonomous Service Management, C3SEM

- *Spanish Research Project*
- Project duration: 2009-2013
- Project coordinator: Dr. Ramón Agüero
- Role: Principal researcher, coordinator

Scalable and Adaptive Internet soLutions, SAIL

- *7th Framework Programme*
- Project duration: 2010-2012
- Project coordinator: Dr. Thomas Edwall (Ericsson)
- Role: coordinated University of Cantabria activities

MOBility concepts for IMT-Advanced, MOBILIA

- *CELTIC Programme*
- Project duration: 2008-2010
- Project coordinator: Miguel Ángel Peña (TTI Norte)
- Role: Technical Coordinator

CReating Ubiquitous Intelligent Sensing Environments, CRUISE

- *6th Framework Programme*
- Project duration: 2007-2008
- Project coordinator: Prof. Ramjee Prasad (Aalborg University)
- Role: work-package leader, coordinated University of Cantabria activities

Ambient Networks, Phases 1 and 2

- *6th Framework Programme*
- Project duration: 2004-2005 and 2006-2007
- Project coordinator: Dr. Henrik Abramowicz (Aalborg University)
- Role: task leader, coordinated University of Cantabria activities

RELEVANT
PUBLICATIONS
(LAST 6 YEARS)

In what follows, some of the most relevant publications from the last 6 years (since 2012) is given, in reverse chronological order.

- Luis Francisco Diez, Ramón Agüero, Luis Muñoz. “Electromagnetic Field Assessment as a Smart City Service: The SmartSantander Use-Case”. *Sensors* 2017, 17(6) 1250 doi: 10.3390/s17061250
- Pablo Garrido, Daniel Lucani, Ramón Agüero. “Role of intermediate nodes in Sparse Network Coding: characterization and practical recoding”. *Proceedings of European Wireless’17. Best Paper Award.*
- Pablo Garrido, Daniel Lucani, Ramón Agüero. “A Markov Chain Model for the Decoding Probability of Sparse Network Coding”. *IEEE Transactions on Communications, Vol. 64. No 4, April 2017, pp 1675-1685* doi:10.1109/TCOMM.2017.2657621
- Pablo Garrido, Daniel Lucani, Ramón Agüero. “How to Tune Sparse Network Coding over Wireless Links”. *Proceedings of WCNC’17* doi:10.1109/WCNC.2017.7925561

- Pablo Garrido, David Gómez, Jorge Lanza, Joan Serrat, Ramón Agüero. “Providing Reliable Services over Wireless Networks Using a Low Overhead Random Linear Coding Scheme”. *Mobile Netw Appl* (2016) doi:10.1007/s11036-016-0731-7
- Johnny Choque, Luis Francisco Diez, Alberto Eloy García, Ramón Agüero, Luis Muñoz. “Optimum Multi-service Access Selection over Heterogeneous Wireless Networks”. *Transactions on Emerging Telecommunications Technologies, Vol 27, No 3, 2016* doi:10.1002/ett.2870
- Luis Francisco Diez, George Popescu, Ramón Agüero. “A Geometric Programming Solution for the Mutual-Interference Model in HetNets”. *IEEE Communication Letters, July 2016* 10.1109/LCOMM.2016.2592914
- Pablo Garrido, Chres W. Sorensen, Daniel E. Lucani, Ramón Agüero. “Performance and Complexity of Tunable Sparse Network Coding with gradual growing functions over Wireless Networks”. *Proceedings of PIMRC’16* doi:10.1109/PIMRC.2016.7794915
- Pablo Garrido, David Gómez, Jorge Lanza, Ramón Agüero. “Exploiting Sparse Coding: A Sliding Window Enhancement of a Random Linear Network Coding Scheme”. *Proceedings of ICC’16* doi:10.1109/ICC.2016.7510783
- Pablo Garrido, David Gómez, Frank Fitzek, Ramón Agüero. “When TCP and Network Coding meet Wireless Links”. *Proceedings of European Wireless’16*
- Matthieu Brau, Julie Stephan, Luis Francisco Díez, Yoann Corre, Yves Lostanlen, Ramón Agüero. “Assessing the WiFi offloading benefit on both service performance and EMF exposure in urban areas”. *Proceedings of WirelessDays’16*
- Luis Francisco Diez, Julián Igareda, Voichita Iancu, Emil Slusanschi, Ramón Agüero. “Routing algorithm to fairly distribute the exposure to electromagnetic fields over wireless mesh networks”. *Proceedings of WiMob’15*
- Luis Francisco Diez, Yoann Corre, Benoit Radier, Mathieu Brau, Ramón Agüero. “Complementing radio-planning tools to analyze EMF-aware access selection”. *Proceedings of the ISWCS’15*
- Pablo Garrido, David Gómez, Ramón Agüero, Joan Serrat. “Combination of Random Linear Coding and Cross-Layer Opportunistic Routing: Performance over Bursty Wireless Channels”. *Proceedings of PIMRC’15*
- Pablo Garrido, David Gómez, Ramón Agüero, Joan Serrat. “Combination of Intra-Flow Network Coding and Opportunistic Routing: Reliable Communications over Wireless Mesh Networks”. *Proceedings of SIMUTOOLS’2015*
- Pablo Garrido, David Gómez, Ramón Agüero, Luis Muñoz. “Performance of Random Linear Coding Over Multiple Error-Prone Wireless Links”. *IEEE Communication Letters, June 2015*
- Luis Francisco Diez, Ramón Agüero, Joel Penhoat. “Reducing the electromagnetic exposure over LTE networks by means of an adaptive retransmission scheme: a use case based on a video service”. *Proceedings of VTC’Spring 2015*
- David Gómez, Ramón Agüero, Marta García, Luis Muñoz. “On the use of hidden markov processes and auto-regressive filters to simulate indoor bursty wireless channels over ns-3”. *Wireless Networks (Springer), Feb 2015*
- Antonio De Domenico, Luis Francisco Díez, Ramón Agüero, Dimitri Ktenas, Valentin Savin. “EMF-Aware Cell Selection in Heterogeneous Cellular Networks”. *IEEE Communication Letters, February 2015*

- Javier Rubio-Loyola, Ana Loreto Gonzalez, Luis Francisco Díez, Ramón Agüero, Joan Serrat. “An energy-oriented optimization algorithm for solving the cell assignment problem in 4G-LTE communication networks”. *Proceedings of the IFIP Wireless Days 2014*
- David Gómez, Eduardo Rodríguez, Pablo Garrido, Ramón Agüero, Luis Muñoz. “Enhanced Opportunistic Random Linear Source/Network Coding with Cross-Layer Techniques over Wireless Mesh Networks”. *Proceedings of the IFIP Wireless Days 2014*
- Voichita Iancu, Luis Francisco Díez, Laura Rodríguez de Lope, Emil Slusanschi, Ramón Agüero. “A reward-based routing protocol to reduce the EMF exposure over wireless mesh networks”. *Proceedings of the IFIP Wireless Days 2014*
- Rashid Mijumbi, Joan Serrat, Juan Luis Gorricho, Javier Rubio Loyola, Ramón Agüero. “Survivability-oriented Negotiation Algorithms for Multi-domain Virtual Networks”. *Proceedings of CNSM’2014*
- David Gómez, Eduardo Rodríguez, Ramón Agüero, Luis Muñoz. “Reliable communications over lossy wireless channels by means of the combination of UDP and Random Linear Coding”. *Proceedings of ISCC’2014*
- Milos Tesanovic, Emmanuele Conil, Antonio De Domenico, Ramón Agüero, Frederik Freudenstein, Luis Correia, Serge Bories, Luc Martens, Peter Wiedemann, Joe Wiart. “Wireless networks and EMF; paving the way for low-EMF networks of the future: the LEXNET project”. *IEEE Vehicular Technology Magazine, 2014*
- David Gómez, Eduardo Rodríguez, Ramón Agüero, Luis Muñoz. “Reliable communications over Wireless Mesh Networks with Inter and Intra-flow network coding”. *Workshop on ns-3, 2014*
- David Gómez, Ramón Agüero, Marta García, David Ros. “TCP Acknowledgement Encapsulation in Coded Multi-hop Wireless Networks”. *Proceedings of VTC’Spring 2014*
- David Gómez, Ramón Agüero, Marta García, Luis Muñoz. “TCP Performance over Indoor Bursty Wireless Channel Models”. *Proceedings of the Wireless Days 2013 Conference. Valencia, 13-15 November 2013.*
- Ramón Agüero, Johnny Choque, Luis Francisco Díez, Luis Muñoz. “Binary linear programming formulation of the access selection problem in multi-service and heterogeneous network environments”. *Proceedings of the Wireless Days 2013 Conference. Valencia, 13-15 November 2013*
- Johnny Choque, Luis Francisco Díez, Ramón Agüero, Luis Muñoz. “Providing Differentiated QoS with Dynamic Pricing Policies for Wireless Access Networks”. *Proceedings of the Wireless Days 2013 Conference. Valencia, 13-15 November 2013*
- Lucio Ferreira, Ramón Agüero, Luisa Caerio, Avi Miron, Michael Soellner, Peter Schoo, Lucian Suci, Andreas Timm-Giel, Asanga Udugama. “Open Connectivity Services for the Future Internet”. *Proceeding of the Wireless Communications and Networking Conference, WCNC 2013*
- Xi Li, Olivier Mehani, Ramón Agüero, Umar Toseef, Yasir Zaki, Carmelita Gorg. “Evaluating User-Centric Multihomed Flow Management in Multi-User Scenarios”. *Proceedings of the The 14th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks, WoWMoM 2013*
- David Gómez, Ramón Agüero, Marta García, Luis Muñoz. “Replication of the Bursty Behavior of Indoor WLAN Channels”. *Proceedings of the the sixth International Conference on Simulation Tools and Techniques, SIMUTOOLS 2013 (Workshop on WNS3)*

- David Gómez, Ramón Agüero, Marta García, Luis Muñoz. “On the Modeling of a Realistic Wireless Channel by means of a Hidden Markov Process.” *Proceedings of the 8th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2012)*
 - David Gómez, Sofiane Hassayoun, Arnaldo Herrero, Ramón Agüero, David Ros. Impact of Network Coding on TCP Performance in Wireless Mesh Network. *Proceedings of the 23rd IEEE Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC’12)*
 - Carmen López, Ramón Agüero, Johnny Choque, Luis Muñoz. “On the Equilibrium of Resource Allocation for Heterogeneous Wireless Access Networks”. *Proceedings of the 23rd IEEE Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC’12)*
 - Hiram Galeana-Zapién, Javier Rubio-Loyola, Pablo Salazar-Linares, Ramón Agüero, Joan Serrat, Stephen Davy. “A Business-oriented Management Framework for Mobile Communication Systems” *Springer ACM Mobile Networks and Applications (MONET) 2012*
- EDITORIAL SERVICES
- *Mobile Networks & Applications, Springer*, Guest Editor of 8 Special Issues since 2011
 - *Wireless Networks, Springer*. Member of the editorial board since January, 2015
 - *IEEE Communication Letters*. Member of the editorial board since January, 2017
- COMMITTEE AND REFEREE SERVICES
- General Chair of the *Mobile Networks and Management, MONAMI* conference in 2010, 2015 and 2016
 - TPC Chair of the *Mobile Networks and Management, MONAMI* conference in 2009, 2011, 2012, 2013 and 2014
 - Mobile and Wireless Networks Track Chair in the *International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC)* in 2015 and 2016
 - Emerging Technologies, Architectures and Services Track Chair in the *IEEE Wireless Communications and Networking Conference (WCNC)* in 2018
 - Regular TPC member of various conferences, including: PIMRC, WCNC, WiMob, ISWCS, Wireless Days, European Wireless
 - Regular reviewer of several journals and magazines, including: IEEE Communications Magazine, IEEE Transactions on Networking, IEEE Communication Letters, Wireless Networks, Computer Networks
- OTHER RESPONSIBILITIES
- Ramón Agüero was the main organizer and chaired the following two Summer Schools.
- **SAIL Summer School**. Santander, June 25th-28th, 2012. More than 50 attendees the event, which featured 11 Lectures and 2 keynotes. A PhD Work-In-Progress session was also organized within the event.
 - **LEXNET Summer School on Low-EMF Communications and Networking**. Santander, July 6th-9th, 2015. More than 40 attendees the event, which featured 11 different talks.
- ADDITIONAL INFORMATION
- IEEE Senior Member since 2015