

MIMO Processing for 4G and Beyond

Fundamentals
and Evolution

Edited by
Mário Marques da Silva
Francisco A. Monteiro

 CRC Press
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NOTA INTRODUTÓRIA DA OBRA*

Multiple-input multiple-output was from the beginning a disruptive idea which opened horizons to up-until-then unimaginable data rates and system capacities in wireless systems. This book offers a fresh look at MIMO signal processing, namely its detection (including in the frequency domain) and precoding, and looks at its combination with OFDM, UWB and CDMA and the impact at the system-level. MIMO remains a pillar of high-speed systems beyond 4G which incorporate massive MIMO and network coding at the physical layer, and these topics are also addressed. The book brings together some highly cited authors from first-class institutions.

NOTA BIOGRÁFICA DOS ORGANIZADORES



Mário Marques da Silva [marques.silva@ieee.org] is an Associate Professor and the Director of the Department of Sciences and Technologies at the Universidade Autónoma de Lisboa, He is also a Researcher at Telecommunications Institute, in Lisbon, Portugal. He received his B.Sc in Electrical Engineering in 1992, and the M.Sc and PhD degrees in Electrical and Computers Engineering (Telecommunications), respectively in 1999 and 2005, both from Instituto Superior Técnico, University of Lisbon.

Between 2005 and 2008 he was with NATO Air Command Control & Management Agency (NACMA) in Brussels (Belgium), where he managed the deployable communications of the new Air Command and Control System Program. He has been involved in multiple networking and telecommunications projects. His research interests include networking and mobile communications, namely block transmission techniques (OFDM, SC-FDE), interference cancellation, space-time coding, MIMO systems, smart and adaptive antennas, channel estimation, software defined radio, IP technologies and network security. Mário Marques da Silva is also a Cisco certified CCNA instructor.

He is the author of four books entitled *Multimedia Communications and Networking*, *Transmission Techniques for Emergent Multicast and Broadcast Systems*, *Transmission Techniques for 4G Systems* and

* Índice disponível em: http://iscte-iul.pt/Libraries/indice_livros_SID/01000090400.sflb.ashx

MIMO Processing for 4G and Beyond: Fundamentals and Evolution (all from CRC Press). Moreover, he is author of several dozens of journal and conference papers, a member of IEEE and AFCEA, and reviewer for a number of international scientific IEEE journals and conferences. Finally, he has chaired many conference sessions and has been serving in the organizing committee of relevant EURASIP and IEEE conferences.

O OUTRO LADO...

Lugar de sonho?

Oriente.



Presente ideal?

Viagem.



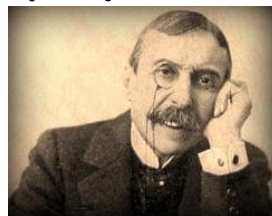
Música preferida?

U2.



Autor preferido?

Eça de Queirós.



Livro de referência?

A Cidade e as Serras.



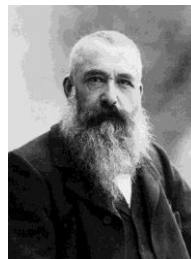
Quadro?

Mona Lisa.



Pintor?

Monet.



Filme?

Les uns et les autres.



Carro de sonho?

Porsche.



Desporto?

Jogging.



Clube?

Sporting.



Frase?

Corpo são mente sã.

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Mário Marques da Silva

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Francisco Monteiro is from Lisbon, Portugal. He's married to Fotini Hadjittofi, a Greek Cypriot national, who is also an academic, and they have one daughter, Adriana, born in September 2013.

He obtained his PhD degree in Engineering from the University of Cambridge, UK in 2011, where he lived between April 2005 and October 2009. Previously, he received the Licenciatura in Electrical and Computer Engineering in 1998 (5 years degree, telecommunications profile) and the MSc in Electrical and Computer Engineering in 2003 (2 years degree, also telecommunications profile), both from Instituto Superior Técnico, University of Lisbon.

He is now a researcher at the Instituto de Telecomunicações (in the Radio Systems Group) and a tenure-track Assistant Professor at ISCTE - University Institute of Lisbon, Portugal.

In Cambridge he was a member of Fitzwilliam College (where he was made a College Senior Scholar in 2007/2008), a member of the Digital Technology Group of The Computer Laboratory, and also as a member of the Department of Engineering, Division of Information Engineering.

He was a Visiting Researcher in the Communications Group of the the Department of Electrical and Computer Engineering of the University of Toronto, Canada, for 4 months (December 2007 to February 2008 and June/July 2008) working under the guidance of

Professor Frank Kschischang, and funded by scholarships from the Royal Academy of Engineering, the Calouste Gulbenkian Foundation and the Cambridge Philosophical Society.

In 2014 he was a Visiting Researcher at the School of Computing and Communications of the Lancaster University for 1 month (July), sponsored by a European COST Short Term Scientific Mission for Early Stage Researchers.

In January 2015 he received an Exemplary Review Award 2014, from the IEEE Wireless Communications Letters (1st Quartile journal co-sponsored by the IEEE Communications Society, IEEE Signal Processing Society, and IEEE Vehicular Technology Society). The award is given to the top 3% reviewers who have performed reviews considered by the associate editors as being relevant and timely reviews, consistently for a number of papers over the year.

In October 2007 Francisco received the Best Paper Award (Conference Prize) at the European Conference on Wireless Technology 2007 in Munich, Germany.

He also won the Young Engineer Best Paper Award at the European Conference on Wireless Technology in October 2004, in Amsterdam, Netherlands.

His M.Sc. thesis was awarded the 3rd place at the Innovation Young Engineer Competition presented by the Portuguese Engineers Institution ("*Ordem dos Engenheiros*") in December 2002.

In March 2007 the Portuguese Public Television included him in one of the documentaries "Scientist Generation" (which presented bio profiles of young Portuguese researchers).

From 1998 until 2000 he was a Teaching Assistant (Monitor and Assistente Estagiário) at the Department of Electrical and Computer in Engineering, Instituto Superior Técnico, University of Lisbon. From 2003 until 2012 he was an Assistant Lecturer (Assistente) at ISCTE - University Institute of Lisbon, Portugal.

His research has always been focused on digital communications physical layer involving channel coding, digital modulation, detection

theory, low complexity detection algorithms, multiple-input multiple-output (MIMO) wireless systems, physical layer network coding, and interference suppression for full-duplex radio. His M.Sc. thesis dealt with low complexity detection of continuous phase modulation and in his PhD thesis focused on the geometry of lattice detection algorithms for MIMO spatial multiplexing.

He is the co-editor of the book "MIMO Processing for 4G and Beyond: Fundamentals and Evolution", published by CRC Press / Taylor and Francis Group, June 2014, USA, with a list of reputed contributors in the field. He acts as a frequent reviewer for a number of IEEE journals and conferences, and has been serving in the organizing committee of relevant IEEE and EURASIP conferences (tutorial chair and organising a number of special sessions, besides serving as member of several conference technical program committees.

In 2015 he is the Lead Guest Editor of a special issue on Network Coding of the EURASIP Journal on Advances in Signal Processing, published by Springer.

Francisco is a Life Member of Fitzwilliam College, a Fellow of the Cambridge Philosophical Society, a member of several IEEE societies, a Junior Member of the Isaac Newton Institute for Mathematical Sciences, and also a member of several British academic societies related with the promotion of science and mathematics.

O OUTRO LADO...

Lugar de sonho?

Cambridge (Reino Unido) e Veneza (Itália).



Para praia de sonho: "Nissi Beach", em Chipre.



Como melómano: Metropolitan (Nova Iorque), Teatro alla Scala (Milão), Teatro Liceu (Barcelona), Opera Estatal da Baviera (Munique) e o Covent Garden (Londres).

Pelos conteúdos: museus do Louvre (Paris), museu do Prado (Madrid), a Pinacoteca Brera (Milão) ou a Pinacoteca Alte (Munique) e o The Art Institute of Chicago e a biblioteca John Rylands em Manchester.

Presente ideal?

Vales para poder escolher eu próprio livros e CDs ou então bilhetes para as temporadas de música da Gulbenkian.

Música preferida?

A morte de Isolda ("Liebestod"), do Richard Wagner

Every Note

TRISTAN UND ISOLDE.
Isolde's Liebestod.
Mild und leise wie er lächelt.
Mort d'Isolt. Isolde's Love-death.
Doux et calme comme il sourit. Light and softly, how he smiles.
Molto moderato cominciare. Richard Wagner.



Autor preferido?

Muitos, mas para escolher na ficção: Ian Macwean e David Lodge.



Para escolher na divulgação científica: Simon Singh, Matt Ridley e Jorge Buesco.



Livro de referência?

Muitos, mas seleccionando: “Cândido, ou O Optimismo” do Voltaire, ou o “Admirável Mundo Novo” do Aldous Huxley, mas muitos de divulgação científica e biografias.



Quadro?

Também muitos, mas tendo de escolher: “La Grande Jatte” do Seurat, pelo impacto e imponência das dimensões (no Art Institute of Chicago) ou “O Jardim das Delícias Terrenas” do Bosch (no Prado, Madrid) ou “As Tentações de Santo Antão” (no MNAA, Lisboa).



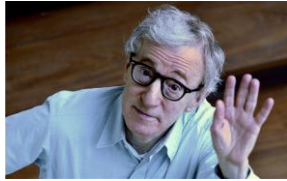
Pintor?

Muitos. Pedindo para seleccionar: Goya, pelos temas desde o mito Grego até à provocação moderna; Bruegel (o velho), Canaletto e Vermeer pela técnica e estética, e o Bosch pelo humor.



Filme?

Amarcord, do Federico Fellini; e quase todos do Woody Allen.



Carro de sonho?

Jaguar, projectados em Coventry, no Reino Unido (mas já vendida a uma empresa da Índia).



Desporto?

Para praticar: andar de bicicleta ou natação. Para assistir: ténis.



Clube?

Sporting Club de Portugal (contudo, não sigo notícias de futebol).



Frase/pensamento?

Prepare for the worst, and hope for the best.

NOTA BIBLIOGRÁFICA DO ORGANIZADOR

Francisco A. Monteiro

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