Rodrigo Quian Quiroga

Head of Bioengineering • Dept. of Engineering • University of Leicester
University Road. Leicester LE1 7RH. United Kingdom
Ph: +44 (0) 116 252 2314 • Fax: +44 (0) 116 252 2619 • E-mail: rqqg1@leicester.ac.uk
www.le.ac.uk/~neuroengineering

PERSONAL INFORMATION

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Qualifications

PhD in Applied Mathematics, *University of Luebeck, Germany* 1998
Thesis: **Quantitative analysis of EEG signals.**

MSc in Physics, *University of Buenos Aires, Argentina* 1993

Current position

Professor of Bioengineering. 2008-
Head of Bioengineering research group.
Department of Engineering. University of Leicester, UK.

Visiting positions:

Visiting professor 2010
Department of Physics. University of Buenos Aires, Argentina.

Visiting researcher 2004-
Department of Neurosurgery, UCLA, USA.

Visiting researcher 2006-
Leibniz Institute of Neurobiology. University of Magdeburg, Germany

Previous positions

Reader in Bioengineering 2006-2008
Dept. of Engineering. University of Leicester, UK.

Lecturer in Bioengineering 2004-2006
Dept. of Engineering. University of Leicester, UK.

Visiting associate 2004-2007
Division of Biology, Caltech, USA.

Sloan-Swartz Post-doctoral fellow 2001-2004
Sloan-Swartz Center of Theoretical Neurobiology, Caltech, USA
Advisor: Prof. Christof Koch and Prof. Richard Andersen

Rodrigo Quian Quiroga

Post-doc researcher 1998-2001
Research Center Juelich, Germany.
Advisor: Prof. Peter Grassberger

Visiting scientist February-March 2001
Brain Science Institute, RIKEN, Japan.

Visiting scientist March 2000
Department of Comparative and Physiological Psychology
Catholic University of Nijmegen, The Netherlands.

Graduate Research assistant 1996-1998
Institute of Physiology, Medical University of Luebeck, Germany.

Graduate Research assistant 1995-1996
Department of Epilepsy,
Institute of Neurological Investigations FLENI, Argentina.

Graduate Research assistant 1993-1995
Department of Neurophysiology
Institute of Neurological Investigations FLENI, Argentina.

TEACHING

Current teaching:

Department of Engineering, University of Leicester

- Design of discrete systems (MSc module)
- Introduction to Biomedical Engineering (MSc and MEng module)
- Digital signal processing (3rd year module)

Previous teaching:

Department of Engineering, University of Leicester

- Circuits and systems (1st year module)

Department of Physics, University of Buenos Aires, Argentina

Graduate Teaching Assistant & March 1994 – April 1996
Undergraduate Teaching Assistant March 1991 – March 1994

- Lectured Physics II (optic and thermodynamics), Physics I (mechanics, electromagnetism and hydrodynamic), Physics I (laboratory), Classical Mechanics.

Ciclo Basico Comun, University of Buenos Aires, Argentina

Graduate Teaching Assistant & April 1993 – May 1996
Undergraduate Teaching Assistant March 1989 – April 1993

- Lectured Physics (mechanics).

Rodrigo Quian Quiroga

Advanced courses given:

- Physics applied to anesthesiology. Hospital Italiano, Argentina. 1994.
- Temporal and spatial analysis of electroencephalographic signals. University of Menphis, 2003.
- Introduction to Neuroscience. Young Engineering and Science Program, Caltech, USA, 2003.
- Nonlinear time series analysis. University of La Laguna, Spain, 2004.
- Temporal and spatial analysis of electroencephalographic signals. University of Arizona, 2006.
- Single-trial analysis of electroencephalographic signals. University of Madrid, Spain, 2006.
- Systems Neuroscience. University of Buenos Aires, Argentina, 2010.
- Processing of extracellular recordings: spike sorting. Second joint meeting of the Argentine Society for Neuroscience and the Argentine Workshop in Neuroscience. Cordoba, Argentina, 2010.
- Extracting information from neural populations: Basic principles and clinical applications. Second joint meeting of the Argentine Society for Neuroscience and the Argentine Workshop in Neuroscience. Cordoba, Argentina, 2010.

SUPERVISION OF STUDENTS

- Post-doctoral researchers:
  - Dr. Hernan Rey. 2010 -
  - Dr. Luis Camuñas. 2010 -
  - Dr. Carlos Pedreira. 2010 -
  - Dr. Jonathan Becedas. 2009 - 2011
  - Dr. Alberto Capurro. 2008 – 2010.
  - Dr. Matias Ison. 2006 - 2007.
  - Dr. Alexander Kraskov (co-supervised with Christof Koch). 2004 – 2006.

- PhD students:
  - Joaquin Navajas. 2011 –
  - Julieta Campi. 2011 –
  - Christopher Gale. 2010 -
  - Maryam Ahmadi. 2009 -
  - Zaira Pineda Rico. 2009 -
  - Jennifer Binnie. 2008 -
  - Juan Martinez-Gomez. 2006 -
  - Carlos Pedreira 2006 – 2010.
  - Andreas Kaltenbruner (visiting student). Jan. 2006 – June 2006.
  - Leila Reddy (co-supervised with Christof Koch) 2001 – 2005.
  - Thomas Kreuz (co-supervised with Peter Grassberger) 1999 – 2003.
  - Alexander Kraskov (co-supervised with Peter Grassberger) 1999 – 2003.

- Directed 10 MSc theses, 1 MEng thesis and 15 final year projects at the Dept. of Engineering, University of Leicester.

GRANTS

- £367,205. MRC (PI). "From single units to local field potentials: Study of the timing of medial temporal lobe responses in humans". 2011-2014.
- £30,338. AHRC (PI). "Visual perception in arts and neuroscience". 2011.
- £27,000. College of Science and Engineering. U. Leicester. 2011-2013.
- £50,000. Royal Society (PI). "Wolfson research merit award". 2010-2015.
- £321,028. EPSRC (PI). "Ultra Low Power Implantable Platform for Next Generation Neural Interfaces". 2010-2014.
- £297,583. MRC (PI). "Intracraneal Recordings in humans: Study of memory processes and applications to neural prostheses". 2010-2013.
- £779,102. BBSRC. (CI). "A systems approach to understanding sensory-motor control of aimed limb movements". 2010-2013.
- £12,500. Leverhulme Trust. (PI). Artist in residence award. 2009-2010.
- £535,983. MRC. (PI) "Neural correlates of visual perception and behaviour: Analysis of multiple single-neuron recordings in humans". 2008-2011.
- £490,000. Capital Investment Fund, University of Leicester (CI). Point of care implemented diagnostics unit.
- £12,000. (PI). Royal Society. "Study of learning processes with single-trial evoked potentials". 2008-2010.
- £51,992 (CI). AHRC. "Perception and wellbeing: a cross-disciplinary approach to experiencing art in the museum". 2008-2011.
- £13,839. EPSRC. (PI) "Data Reduction Techniques for Systematic Information Quantification in Large Scale, Multiple Spike Trains". 2007-2008.
- £125,567. EPSRC. (PI) "Neural coding of visual inputs in the human medial temporal lobe". 2006-2009.
- £4,037,770. EPSRC. (CI) (£102,000 for Leicester) "Code analysis, repository, and modeling for e-Neuroscience". 2006-2011.
- $110,000. Swartz Foundation. "Coding and decoding of visual perception from multiunit activity and local field potentials" with Christof Koch. 2004-2006.
- $1,000. Travel award for participation at the 8th Evoked Potentials symposium, Japan 2004.
- $1,000. Travel award for participation at the 24th Int. epilepsy congress. Argentina, 2001.
- $1,000. Travel award for participation at the 6th Evoked Potentials symposium, Japan 1998.

Rodrigo Quian Quiroga

PROFESSIONAL MEMBERSHIPS

- Member of the Medical Research Council's Biomedical Informatics Training and Career Development Panel.
- Member of the Biotechnology and Biological Sciences Research Council (BBSRC) pool of experts.
- Member of the EPSRC Review College.
- Independent expert. European Commission (EU – FP7 Programme).
- Society for Neuroscience.
- Theoretical Neuroscience Network.

SELECTED PRESS COVERAGE

- Research with human single cell recordings described in a feature news article in Nature (http://www.vis.caltech.edu/~rodri/News/2009/nature_news_feature.pdf).
- Article in Current Biology 2009 featured in more than 50 press releases including: The Wall Street Journal, The Washington Post, New Scientist, Discover Magazine, ABC News, USA Today, Corriere della Sera, etc.
- Professorial Inaugural Lecture featured in Daily Mail, Daily Telegraph, BBC World, and others.
- Article in PNAS 2008 featured in Research Highlights from Nature Reviews Neuroscience, La Recherche, La voz de Galicia, La Nacion, La Razon, United Press International.
- Article in J. Neurophysiology 2007 featured in Critica de Argentina, Leicester Mercury, Perfil, Illustreret Videnskab (Scandinavian scientific magazine).
- Article in Nature 2005 selected as one of the top 100 scientific stories of the year by Discover Magazine and featured in The New York Times, Scientific American, Nature Reviews Neuroscience, New Scientist, LA Times, Daily Mail, The Independent, Clarin, La Nacion, etc.

For a selection of press releases see: www.le.ac.uk/neuroengineering

AWARDS AND HONORS

- Royal Society Wolfson Research Merit Award. 2010.
- Work on neural correlates of conscious perception selected as one of the "Breaking news in Neuroscience" by the federation of European Neuroscience Societies (fENS), 2008.
- Work on invariant representation by single neurons selected as one of the top 100 scientific stories of 2005 by Discover Magazine.
- Achievement award, University of Leicester, 2005.
- Best poster price at the meeting: "Neural substrates of cognition." Madrid, 2005.
- Young researcher travel award for participation at the 8th International Evoked Potentials Symposium. Fukuoka, Japan, 2004.
- Sloan-Swartz fellow, 2001-2003.
- Young investigator awardee. Award given by the American Epilepsy Society, 2001.

- Young researcher travel award for participation at the 24th International Epilepsy Congress. Buenos Aires, Argentina, 2001.
- Young researcher travel award for participation at the 6th International Evoked Potentials Symposium. Okazaki, Japan, 1998.
- Prize to the scientific-technological production. University of Buenos Aires, 1995.

REFEREE FOR JOURNALS

Nature Reviews Neuroscience, Nature Neuroscience, Journal of Neuroscience, Current Biology, NeuroImage, Psychological Reviews, Trends in Neuroscience, PLOS Biology, PLOS Computational Biology, Neural Computation, Neuropsychologia, Physical Review Letters, Physical Review E, Physica D, Physics Letters A, Chaos and Complexity Letters, IEEE Signal Processing Letters, IEEE Transactions on Biomedical Engineering, Journal of Neuroscience Methods, Cerebral Cortex, Clinical Neurophysiology, Journal of Computational and Applied Mathematics, Biological Psychology.

EXTERNAL REFEREE FOR:

- BBSRC.
- EPSRC.
- EU-FP7.
- Dutch National Science Foundation.
- Agence Nationale de Recherche, France.
- Sandia National Laboratories, USA.
- Swiss National Science Foundation
- Indian Institute of Technology, Bombai, India.
- Universidad Complutense de Madrid.
- Universidad Pompeu-Fabra, Barcelona, Spain.
- King's College London.

SELECTED INVITED TALKS

- Fundación "la Caixa". Madrid, 2011.
- Single Unit Studies of the Human Brain. NYU, 2011.
- XI International Conference on Cognitive Neuroscience. Mallorca, Spain, 2011.
- Los retos de la Neurociencia en el s.XXI. Valencia, Spain, 2011.
- British Neuroscience Association Meeting. Harrogate, UK, 2011.
- Max-Planck-Institut für Hirnforschung. Frankfurt, Germany, 2011.
- Consolider Seminar Series. Barcelona, 2011.
- SFB Lecture Series. University of Freiburg, Germany, 2011.
- SISSA, Trieste, 2011.
- Psychology School. University of Sussex, 2010.

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- Faculty of Exact Sciences. University of Cordoba. Cordoba, Argentina, 2010.
- Workshop Physics and Neuroscience. Cordoba, Argentina, 2010.
- Joint Neuroscience meeting. Corboba, Argentina, 2010.
- Neurotechnology Symposium. Technical University Berlin, 2010.
- Summer school for Neurodynamics. University of Reading, 2010.
- Simposio Borges y la memoria, University of Buenos Aires, 2010.
- Gordon Research Conference, Bates College, USA, 2010.
- Zangwill Club. Cambridge University, 2010.
- Janelia workshop. Janelia Farm Research, 2010.
- Bernstein Centre for Computational Neuroscience, University of Berlin, 2010.
- Bienal Borges-Kafka. Buenos Aires, 2010.
- Computational Neuroscience and Cognitive Robotics Centre. University of Birmingham, 2010.
- Brain Modes, University of Bristol, 2009.
- Annual meeting of the Spanish Clinical Neurophysiology Society, Madrid, 2009.
- CSCA Workshop, University of Amsterdam, 2009.
- Cognitive Neuroscience Autumn School, University of Oxford, 2009.
- Art and Science meeting. Benasque Centre, Spain, 2009.
- Society for Neuroscience meeting. Chicago, 2009.
- University of Toulouse, 2009.
- Institute of Neurology, University College London, 2009.
- Dept. of Cognitive Neurology, University of Tubingen, 2009.
- National Science and Engineering Week, University of Leicester, 2009.
- Institute of Neuro- and Bio-Informatics, University of Lubeck, Germany, 2008.
- Spike train network seminar. University of Newcastle, 2008.
- Cognition brain and technology summer school, Barcelona, 2008.
- Breaking news in Neuroscience sysmposium, fENS, Geneva, 2008.
- Craik Club. Cambridge University, 2008.
- University Medical Centre, Hamburg-Eppendorg, Germany, 2008.
- Institute of Neuroscience, University of Newcastle, 2008.
- School of Systems Engineering, University of Reading, 2008.
- Workshop Neurodynamics, Leiden, The Netherlands, 2008.
- Dept. of Technology, University Pompeu Fabra, Barcelona, 2008.
- Imaging Centre, University of Birmingham, 2008.
- Neuroscience Institute of Alicante, Spain, 2008.
- Meeting on Direct recordings from the human brain, UCLA, 2007.
- Department of Psychology. Goldsmiths, Univ. of London, 2007.
- Dept. of Physiology, Anatomy and Genetics, Oxford University, 2007.
- Institute of Psychiatry, University College London, 2007.
- Workshop on Brain Dynamics, LENA, Paris, 2007.
- Vision Science Society Annual Meeting. Sarasota, USA, 2007.
- Institute of Neuroinformatics, University of Zurich, Switzerland, 2007.
- Workshop on Neural Coding. University of Manchester, 2007.
- Dept. of Physics and Astronomy, University of Leicester, 2007.
- Institute of Science and Technology in Medicine. Keele University, UK, 2006.
- Universidad Autonoma de Madrid, 2006.
- 5th Forum of European Neurosciences. Vienna, 2006.
- Epilepsy interdisciplinary research meeting. Kings College London, 2006.

- 6th Dutch Endo-Neuro-Psycho meeting. Doorwerth, The Netherlands, 2006.
- Dept. of Bioengineering, Imperial College London, 2006.
- Gonda Brain Research Center, Bar Ilan University, Israel, 2006.
- Interdisciplinary Center for Neural Computation. Hebrew University, Israel, 2006.
- Centre for the scientific study of consciousness. University of Arizona, USA, 2006.
- Division of Neurophysiology. National Institute for Medical Research. London, 2006.
- Café Scientific. University of Leicester, UK, 2006.
- Dept. of Physics, University of Buenos Aires, Argentina, 2006.
- Dept. of Neurology. University of Magdeburg, Germany, 2005.
- Sloan Swartz Summer meeting, Caltech, 2005.
- Dept. of Mathematics. University of Loughborough, 2005.
- Neurosciences research institute. University of Aston, 2005.
- Dept. of Toxicology. University of Leicester, 2005.
- Centre for Neuroimaging Techniques. University College London, London; 2005
- University of Postdam, Germany; 2005.
- Institute of Child Health. University College London, London; 2004.
- Sloan-Swartz summer meeting; Cold Spring Harbor Laboratories; 2004.
- Festival of Conciousness. University College London, London; 2004.
- University of Tenerife, Spain; 2004.
- NICI. University of Nijmegen, The Netherlands; 2003.
- Computational and neural systems/Bio-engineering retreat Warner Springs, CA, USA; 2003
- Sloan-Swartz summer meeting; UCSD, San Diego, USA; 2003.
- Association for the scientific study of consciousness 7th annual meeting. Memphis, USA; 2003
- Association for the scientific study of consciousness 7th annual meeting Menphis, USA; 2003
- Sloan-Swartz summer meeting. Boston; 2002.
- The 6th world multiconference on systemics, cybernetics and informatics. Orlando, Florida, USA; 2002
- Department of Psychiatry. University of Mainz, Germany; 2001
- Brain Science Institute - RIKEN, Japan; 2001

MEETINGS ORGANIZED

- Computational Brain (co-organizer). University of Leicester, 2009.
- Neural coding in different sensory modalities (with Dr. Tim Pearce). University of Leicester, 2005.

ADMINISTRATION

Current duties:

- Head of Bioengineering research group.
- Departmental ethics officer.

Previous duties:

- Coordinator of the USA exchange program. Dept. of Engineering, University of Leicester. 2005 - 2010.
- Coordinator of the 1st year tutorials. Dept. of Engineering, University of Leicester. 2005.
- Coordinator of the Sloan-Swartz Center for Theoretical Neurobiology at Caltech. 2002-2003.

OTHER SKILLS

- Fluent in Spanish, English and German.

PUBLICATION SUMMARY

- Books:
  - "Borges y la memoria". Rodrigo Quian Quiroga. Editorial Sudamericana, 2011.
  - "Imaging the brain with EEG". Walter Freeman and Rodrigo Quian Quiroga. Springer (to be published in 2012).
  - "Principles of Neural Coding". Rodrigo Quian Quiroga and Stefano Panzeri (Editors). CRC Taylor and Francis (to be published in 2012).
  - "Borges and the memory". Rodrigo Quian Quiroga. MIT Press (to be published in 2012).

- More than 70 journal articles and book chapters (see publication list).
- More than 2000 citations, 31 average citations per paper and h-index: 25.

- Most cited articles:
  - **Invariant visual representation by single-neurons in the human brain.**
    R. Quian Quiroga, L. Reddy, G. Kreiman, C. Koch and I. Fried
    Nature, 435: 1102-1107; 2005. **[ISI: 257 citations]**

  - **Performance of different synchronization measures in real data: a case study on electroencephalographic signals.**
    Quian Quiroga R, Kraskov A, Kreuz T and Grassberger P.
    Phys. Rev. E, 65: 041903; 2002. **[ISI: 185 citations]**

  - **Nonlinear multivariate analysis of neurophysiological signals.**
    Pereda E, Quian Quiroga R, Bhattacharya J.
    Progress in Neurobiology 77: 1-37; 2005. **[ISI: 173 citations]**

  - **Unsupervised spike sorting with wavelets and superparamagnetic clustering.**
    R. Quian Quiroga, Z. Nadasdy and Y. Ben-Shaul
    Neural Computation, 16: 1661-1687; 2004. **[ISI: 140 citations]**

Rodrigo Quian Quiroga - List of publications

I - Journal articles

1. **A category-specific response to animals in the right human amygdala.**
   Mormann F, Dubois J, Kornblith S, Milosavlijevic M, Cerf M, Ison M, Tsuchiya N, Kraskov A, Quian Quiorga R, Adolphs R, Fried I and Koch C.
   Nature Neuroscience (in press).

2. **Selectivity of pyramidal cells and interneurons in the human medial temporal lobe.**
   Ison M, Mormann F, Cerf M, Koch C, Fried I and Quian Quiorga R.
   J. Neurophysiology (in press).

3. **Looking at Ophelia: A comparison of viewing art in the gallery and in the lab.**
   Binnie J, Dudley S and Quian Quiorga R.
   Advances in Clinical Neuroscience and Rehabilitations (in press).

4. **How do we see art: an eye-tracker study.**
   Quian Quiorga R. and Pedreira C.
   Frontiers in Human Neuroscience (in press).

5. **On-Line, Voluntary Control of Single Neurons by Human Though**
   Cerf M, Thiruvengadam N, Mormann F, Kraskov A, Quian Quiorga R, Koch C and Fried I.
   Nature 467: 1104-1108; 2010.

6. **In retrospect: Funes the Memorious**
   Quian Quiroga R
   Nature. 463: 611; 2010

7. **The mind of a mnemonist: a little book about a vast memory [short commentary on Luria's book]**
   Quian Quiroga R
   Nature. 466: 565; 2010

8. **Responses of human medial temporal lobe neurons are modulated by stimulus repetition**
   Pedreira C, Mormann F, Kraskov A, Cerf M, Fried I, Koch C and Quian Quiroga R.
   Journal of Neurophysiology 103: 97-107; 2010.

9. **Measuring sparseness in the brain: comment on Bowers (2009).**
   Quian Quiroga R and Kreiman G
   Psychological Reviews 117: 291-297; 2010.

10. **Postscript: About Grandmother cells and Jennifer Aniston neurons**
    Quian Quiroga R and Kreiman G
    Psychological Reviews 117: 297-299; 2010

11. **Signal processing for neural spike trains**
    Berger T, Chen Z, Cichocki A, Oweiss K, Quian Quiroga R, Thakor N.
    Computational Intelligence and Neuroscience vol 2010 art: 698751; 2010.

12. **Explicit encoding of multimodal percepts by single neurons in the human brain**
    Quian Quiroga R, Kraskov A, Koch C, Fried I
    Current Biology. 19: 1308-1313; 2009

13. **Human medial temporal lobe neurons respond preferentially to personally-relevant images.**
Viskontas I*, Quian Quiroga R* and Fried I (* equal contribution)
Proc. Natl. Acad. Sci. USA 106: 21329-21334; 2009.

14. **Realistic simulations of extracellular recordings**
Martinez J, Pedreira C, Ison M and Quian Quiroga R
Journal of Neuroscience Methods 184: 285-293; 2009

15. **Extracting information from neural populations: Information theory and decoding approaches.**
Quian Quiroga R. and Panzeri S.
Nature Reviews Neuroscience 10: 173-185; 2009.

16. **The neural correlates of perceptual awareness**
Capurro A and Quian Quiroga R
Psyche. 15: 29-38; 2009.

17. **Single-neuron recordings in epileptic patients**
Quian Quiroga R
Advances in Clinical Neuroscience and Rehabilitation. 3: 8-10; 2009.

18. **What is the real shape of exttracellular spikes?**
Quian Quiroga R.
Journal of Neuroscience Methods 177: 194-198; 2009.

19. **Latency and Selectivity of Single Neurons Indicate Hierarchical Processing in the Human Medial Temporal Lobe.**
Mormann F, Kornblith S, Quian Quiroga R, Kraskov A, Cerf M, Fried I, Koch C
Journal of Neuroscience 28(36): 8865-8872; 2008

20. **Human single neuron responses at the threshold of conscious recognition.**
Quian Quiroga R, Mukamel R, Isham E, Malach R and Fried I.
Proc. Natl. Acad. Sci. USA 105: 3599-3604; 2008.

21. **Sparse but not "Grandmother-cell" coding in the medial temporal lobe.**
Quian Quiroga R, Kreiman G, Koch C and Fried I.
Trends in Cognitive Sciences 12: 87-91; 2008.

22. **Selectivity and invariance for visual object perception**
Ison MJ and Quian Quiroga R
Frontiers in Bioscience 4889-4903, May 1; 2008.

23. **Unmixing concurrent EEG-fMRI with parallel independent component analysis.**
Eichele T, Calhoun VD, Moosmann M, Specht K, Jongsma MLA, Quian Quiroga R, Nordby H, Hugdahl K.
Int. J. Psychophysiology 67: 222-234; 2008.

24. **Las neuronas de la conciencia**
Quian Quiroga R.
Ciencia Cognitiva 2: 47-49; 2008.

25. **Spike Sorting**
Quian Quiroga R.
Scholarpedia 2(12):3583; 2007.

26. **Decoding visual inputs from multiple neurons in the human temporal lobe.**
Quian Quiroga R, Reddy L, Koch C and Fried I.
Journal of Neurophysiology 98: 1997-2007; 2007.

27. **What can we learn from single-trial event-related potentials?**
Quian Quiroga R, Atienza M and Jongsma M.
Chaos and complexity letters 2: 345-365; 2007.

28. **Local field potentials and spikes in the medial temporal lobe are selective to image category.**
Kraskov A, Quian Quiroga R, Reddy L, Fried I and Koch C.
Journal of Cognitive Neuroscience 19: 479-92; 2007.

29. **Sparse representation in the human medial temporal lobe.**
Waydo S, Kraskov A, Quian Quiroga R, Fried I and Koch C.
Journal of Neuroscience 26: 10232-10234; 2006.

30. **A Single Neuron Correlate of Change Detection and Change Blindness in the Human Medial Temporal Lobe.**
Reddy L, Quian Quiroga R, Koch C and Fried I.
Current Biology 16: 2066-2072; 2006.

31. **Tracking pattern learning with single-trial even-related potentials.**
Jongsma M, Eichele T, van Rijn C, Coenen A, Hugdahl K, Nordby H and Quian Quiroga.R.
Clinical Neurophysiology 117: 1957-1973; 2006.

32. **Movement intention is better predicted than attention in the posterior parietal cortex.**
Quian Quiroga R, Snyder L, Batista A, Cui H and Andersen R.
Journal of Neuroscience 26: 3615-3620; 2006.

33. **Object selectivity of local field potentials and spikes in the macaque inferior temporal cortex.**
Kreiman G, Hung C, Kraskov A, Quian Quiroga R, Poggio T and DiCarlo J.
Neuron 49: 433-445; 2006.

34. **Reply to "Rejoinder to: Performance of different synchronization measures in real data: a case study on electroencephalographic signals".**
Quian Quiroga R, Kraskov A, and Grassberger P.
Phys. Rev E 72, 063902; 2005

35. **Assessing the spatio-temporal evolution of neuronal activation with single-trial ERP-fMRI.**
Eichele T, Specht K, Moosmann M, Jongsma M, Quian Quiroga R, Nordby H and Hugdahl K.
Proc. Nat. Acad. Sci. USA 102: 17798-17803; 2005.

36. **Nonlinear multivariate analysis of neurophysiological signals.**
Pereda E, Quian Quiroga R, Bhattacharya J.
Progress in Neurobiology 77: 1-37; 2005.

37. **Invariant visual representation by single-neurons in the human brain.**
R. Quian Quiroga, L. Reddy, G. Kreiman, C. Koch and I. Fried
Nature, 435: 1102-1107; 2005.

38. **Precise timing accounts for posttraining sleep-dependent enhancements of the auditory mismatch negativity.**
Atienza M, Cantero JL, Quian Quiroga, R.
Neuroimage, 26: 628-634; 2005.

39. **Spatio-temporal frequency characteristics of intersensory components in audo-visual evoked potentials.**
Sakowitz O, Quian Quiroga R, Schuermann M and Basar E.
Cognitive Brain Research, 23: 316-326; 2005.

40. **The effect of expectancy on omission evoked potentials (OEPs) in musicians and non-musicians.**
Jongsma MLA, Eichele T, Quian Quiroga R, Jenks KM, Desain P, Honing H and van Rijn CM.
Psychophysiology, 42: 191:201; 2005.

41. **Unsupervised spike sorting with wavelets and superparamagnetic clustering.**
R. Quian Quiroga, Z. Nadasdy and Y. Ben-Shaul
Neural Computation, 16: 1661-1687; 2004.

42. **Effects of stimulus repetitions on the event-related potentials of humans and rats.**
Sambeth A, Maes JHR, Quian Quiroga R, Coenen AML
Int.J.Psychophysiology, 53: 197-205; 2004.

43. **Enhanced re-habituation of the orienting response of the human event related potential.**
Sambeth A, Maes JHR, Quian Quiroga R, van Rijn CM and Coenen AML
Neuroscience Letters, 356:103-106; 2004.

44. **Rhythmic Training decreases latency-jitter of the omission evoked potentials (OEPs).**
Jongsma MLA, Quian Quiroga R and van Rijn CM
Neuroscience Letters, 355: 189-192; 2004.

45. **Reply to "Coment on: Performance of different synchronization measures in real data: a case study on electroencephalographic signals.**
Quian Quiroga R, Kraskov A, Kreuz T and Grassberger P.
Phys. Rev E, 67: 063902; 2003.

46. **Single-trial event-related potentials with Wavelet Denoising.**
R. Quian Quiroga and H. Garcia.
Clin. Neurophysiol. 114: 376-390, 2003.

47. **Enthorinal inputs to dentate gyrus are activated mainly by conditioned events with long time intervals.**
Talnov A, Quian Quiroga R, Meier M, Matsumoto G and Brankack J.
Hippocampus, 13: 755-765, 2003.

48. **Reply to "Comments on Kullback-Leibler and Renormalized Entropy: Applications to EEGs of Epilepsy Patients".**
Quian Quiroga R, Arnhold J, Lehnertz K and Grassberger P.
Phys. Rev. E, 66: 043903, 2002.

49. **Event synchronization: a simple a fast method to measure synchronicity and time delay patterns.**
Quian Quiroga R, Kreuz T and Grassberger P
Phys. Rev. E, 66: 041904, 2002.

50. **Frequency evolution during tonic-clonic seizures.**
Quian Quiroga R., Garcia H and Rabinowicz A
Electromyography and Clinical Neurophysiology, 42:323-331; 2002.

51. **Performance of different synchronization measures in real data: a case study on electroencephalographic signals.**
Quian Quiroga R, Kraskov A, Kreuz T and Grassberger P.
Phys. Rev. E, 65: 041903; 2002.

52. **Habituation and sensitization in rat auditory evoked potentials: a single-trial analysis with wavelet denoising.**
Quian Quiroga R and van Luijtelaar ELJM.
Int. J. Psychophysiol, 43: 141-153; 2002.

53. **Wavelet Transform in the analysis of the frequency composition of evoked potentials.**
R. Quian Quiroga, O. Sakowicz, E. Basar and M. Schürmann.
Brain Research Protocols, 8: 16-24; 2001.

54. **Wavelet entropy in event-related potentials: a new method shows frequency tuning of EEG-oscillations.**
Quian Quiroga R, Rosso O, Schürmann M and Basar E.
Biological Cybernetics, 84: 291-299; 2001.

55. **Bisensory stimulation increases gamma-range responses over multiple cortical regions.**
O. Sakowicz, R. Quian Quiroga, M. Schürmann and E. Basar.
Cognitive Brain Research, 11: 267-279; 2001.

56. **Obtaining single stimulus evoked potentials with Wavelet Denoising.**
Quian Quiroga R.
Physica D, 145: 278-292; 2000.

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