

Peter Alexander Bouvrie Morales

Curriculum Vitae



February 24, 2014

PERSONAL DATA

LAST NAME: Bouvrie Morales ID: 74692628-J
NAME: Peter Alexander PASSPORT: AAE367250
BIRTH: January 27, 1981 (Granada) CITIZENSHIP: Spanish and Dutch
ADDRESS: Cuesta de los Chinos nº16 POSTAL CODE: 18010
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ResearchGate: https://www.researchgate.net/profile/Peter_Bouvrie/

EDUCATION

DEGREE **Physics**, University of Granada.
DATE: December 2009

MASTER **Master degree in physics and mathematics, FISYMAT**, University of Granada.
DATE: December 2010

PhD **PhD program in physics and mathematics, FISYMAT**, University of Granada.
DATE: September 2013
THESIS TITLE: *Atomic Information-Theoretic Measures and Quantum Entanglement of Many-Particle Systems*

CURRENT SITUATION

INSTITUTION: School of Sciences. University of Granada.
DEPARTMENT: Department of Atomic, Molecular and Nuclear Physics.
ADDRESS: Avda. Fuentenueva s/n, E-18071, Granada.
PHONE: +34 958240453 FAX: +34 958242862

PARTICIPATION IN FUNDED RESEARCH PROJECTS

TITLE: Física de la Información, Sistemas Ultrafríos y No-linealidad. Aplicaciones Multidisciplinares.
ENTITY: Ministerio de Ciencia e Innovación (MICINN). Proyecto FIS2011-24540
PERIOD: 2012-2014
HEAD: Prof. Jesús Sánchez-Dehesa

TITLE: Física Atómica y Molecular.
ENTITY: Junta de Andalucía, FQM-207
PERIOD: 2009-2011
HEAD: Prof. Jesús Sánchez-Dehesa

TITLE: Entropías Cuánticas.
ENTITY: Junta de Andalucía. Proyecto de Excelencia P06-FQM-2445
PERIOD: 2009-2011
HEAD: Prof. Jesús Sánchez-Dehesa and Angel Ricardo Plastino

TITLE: Física de Altas Energías.
ENTITY: Junta de Andalucía, Proyecto de Excelencia G06-FQM-330
PERIOD: 2005-2010
HEAD: Prof. Fernando Cornet Sánchez del Águila

POSITIONS

TITLE: Research grant.
ENTITY: CEI BioTic, Granada University.
PERIOD: 23/05/2013 - 23/08/2013
INSTITUTION: Department of Physics and Astronomy, Aarhus University.
HEAD: Prof. Klaus Mølmer

TITLE: Research scholarship.
ENTITY: Junta de Andalucía. Proyecto de Excelencia P06-FQM-2445.
PERIOD: 15/12/2012 - 30/03/2013
INSTITUTION: Departamento de Física Atómica, Molecular y Nuclear. Universidad de Granada.
HEAD: Prof. Jesús Sánchez-Dehesa

TITLE: Research scholarship.
ENTITY: Junta de Andalucía. Proyecto de Excelencia P06-FQM-2445.
PERIOD: 15/04/2010 - 3/07/2011
INSTITUTION: Departamento de Física Atómica, Molecular y Nuclear. Universidad de Granada.
HEAD: Prof. Jesus Sánchez-Dehesa

TITLE: Research scholarship.
ENTITY: Junta de Andalucía. Proyecto de Excelencia G06-FQM-330.
PERIOD: 01/09/2008 - 30/12/2008
INSTITUTION: Departamento de Física Teórica y del Cosmos. Universidad de Granada.
HEAD: Prof. Fernando Cornet Sánchez del Águila

TITLE: Research scholarship.
ENTITY: Junta de Andalucía. Proyecto de Excelencia G06-FQM-330.
PERIOD: 01/07/2007 - 30/10/2007
INSTITUTION: Departamento de Física Teórica y del Cosmos. Universidad de Granada.
HEAD: Prof. Fernando Cornet Sánchez del Águila

SCIENTIFIC PUBLICATIONS

TITLE: **How bosonic is a pair of fermions?**
AUTHORS: M.C. Tichy, P.A. Bouvrie, K. Mølmer
JOURNAL: Accepted in *Applied Physics B: Lasers and Optics* (2014) arXiv:1310.8488

TITLE: **Entanglement and the Born-Oppenheimer approx. in an exactly solvable quantum few-body systems**
AUTHORS: P.A. Bouvrie, A.P. Majtey, M.C. Tichy, A.R. Plastino, J.S. Dehesa
JOURNAL: Sent to *Physical Review A* (2014)

TITLE: **Two-boson composites**
AUTHORS: M.C. Tichy, P.A. Bouvrie, K. Mølmer
JOURNAL: *Physical Review A* **88**, 061602 (2013) (Rapid Communication) arXiv:1308.2896

TITLE: **Collective interference of composite two-fermion bosons**
AUTHORS: M.C. Tichy, P.A. Bouvrie, K. Mølmer
JOURNAL: *Physical Review Letters* **109**, 260403 (2012) arXiv:1209.3610v2

TITLE: **Bosonic behavior of entangled fermions**
AUTHORS: M.C. Tichy, P.A. Bouvrie, K. Mølmer
JOURNAL: *Physical Review A* **86**, 042317 (2012) arXiv:1208.5985

TITLE: **Dirac hydrogenic effects via Fisher-Shannon and LMC complexity measures**
AUTHORS: P.A. Bouvrie, S. López-Rosa, J.S. Dehesa
JOURNAL: *Physical Review A* **86**, 012507 (2012)

TITLE: **A generalized relative complexity: application to atomic one-particle densities**
AUTHORS: P.A. Bouvrie, J.C. Angulo, J. Antolín
JOURNAL: *Chemical Physics Letters* **539-540**, 191 (2012)

TITLE: **Uncertainty inequalities among frequency moments and radial expectation values: applications to atomic systems**
AUTHORS: J.C. Angulo, P.A. Bouvrie, J. Antolín
JOURNAL: *Journal of Mathematical Physics* **53**, 043512 (2012)
Selected for the *Virtual Journal of Quantum Information*, Vol. 12, issue 5, May 2012

TITLE: **Quantum entanglement in exactly soluble atomic models: The Moshinsky model with three electrons and with two electrons in a uniform magnetic field**
AUTHORS: P.A. Bouvrie, A.P. Majtey, A.R. Plastino, P. Sánchez-Moreno, J.S. Dehesa
JOURNAL: *European Physical Journal D* **66**, 15 (2012) arXiv:1112.4965v1

TITLE: **Geometric Rényi Divergence: a comparative measure with applications to atomic densities**
AUTHORS: J. Antolín, P.A. Bouvrie, J.C. Angulo
JOURNAL: *Physical Review A* **84**, 032504 (2011)

TITLE: **Generalized Quantum Similarity Index: applications in atoms**
AUTHORS: P.A. Bouvrie, J. Antolín, J.C. Angulo
JOURNAL: *Chemical Physics Letters* **506**, 326-331 (2011)

TITLE: **Entropy and complexity analysis of Dirac-delta-like quantum potentials**
AUTHORS: P.A. Bouvrie, J.C. Angulo, J.S. Dehesa
JOURNAL: *Physica A* **390**, 2215-2228 (2011)

CONGRESSES

Organizer

CONGRESS: MUARC & MPAGS Summer School Quantum Matter: Foundations and new trends.
CONTRIBUTION: Organizing committee
PLACE: Granada (Spain)
DATE: 18-22 September 2011

CONGRESS: IV Jornadas de Jóvenes Investigadores en Física Atómica y Molecular.
CONTRIBUTION: Organizing committee
PLACE: Granada (Spain)
DATE: 1-3 February 2012

Contributions

TITLE: *Entropy and complexity analysis of Dirac-delta-like quantum potentials*
AUTHORS: P.A. Bouvrie, J.C. Angulo, J.S. Dehesa
CONGRESS: III Jornadas de Jóvenes Investigadores en Física Atómica y Molecular.
CONTRIBUTION: Oral communication
PLACE: Santiago de Compostela (Spain)
DATE: 3-4 February 2011

TITLE: *Quantum entanglement in exactly soluble atomic models: The Moshinsky model with three electrons and with two electrons in a uniform magnetic field.*
AUTHORS: P.A. Bouvrie, A.P. Majtey, A.R. Plastino, P. Sánchez-Moreno, J.S. Dehesa
CONGRESS: 11th Iberian Joint Meeting on Atomic and Molecular Physics.
CONTRIBUTION: Poster
PLACE: Coimbra (Portugal)
DATE: 19-22 Jun 2011

TITLE: *Quantifying Dirac effects via Fisher-Shannon and LMC complexity measures.*
AUTHORS: P.A. Bouvrie, S. López-Rosa, J.S. Dehesa
CONGRESS: Relativistic Quantum Information North 2011.
CONTRIBUTION: Poster
PLACE: Madrid (Spain)
DATE: 6-8 September 2011

TITLE: *Quantum entanglement in exactly soluble atomic models: The Moshinsky model with three electrons and with two electrons in a uniform magnetic Field.*
AUTHORS: P.A. Bouvrie, A.P. Majtey, A.R. Plastino, P. Sánchez-Moreno, J.S. Dehesa
CONGRESS: MUARC & MPAGS Summer School Quantum Matter: Foundations and new trends.
CONTRIBUTION: Poster
PLACE: Granada (Spain)
DATE: 18-22 September 2011

TITLE: *Entropy and complexity analysis of Dirac-delta-like quantum potentials*
AUTHORS: P.A. Bouvrie, J.C. Angulo, J.S. Dehesa
CONGRESS: Workshop on Generalized Special Functions of Mathematical Physics.
CONTRIBUTION: Poster
PLACE: Granada (Spain)
DATE: 26-27 January 2012

TITLE: *Quantum entanglement in exactly soluble atomic models: The Moshinsky model with three electrons and with two electrons in a uniform magnetic Field.*
AUTHORS: P.A. Bouvrie, A.P. Majtey, A.R. Plastino, P. Sánchez-Moreno, J.S. Dehesa
CONGRESS: IV Jornadas de Jóvenes Investigadores en Física Atómica y Molecular.
CONTRIBUTION: Poster
PLACE: Granada (Spain)
DATE: 1-3 February 2012

TITLE: *Generalized Quantum Similarity Index and Geometric Rényi Divergence: Applications to atomic densities.*
AUTHORS: P.A. Bouvrie, J. Antolín, J.C. Angulo
CONGRESS: IV Jornadas de Jóvenes Investigadores en Física Atómica y Molecular.
CONTRIBUTION: Oral communication
PLACE: Granada (Spain)
DATE: 1-3 February 2012

TITLE: *Quantum entanglement in Moshinsky atomic models.*
AUTHORS: P.A. Bouvrie, A.P. Majtey, A.R. Plastino, P. Sánchez-Moreno, J.S. Dehesa
CONGRESS: 44th Conference of the European Group of Atomic Systems (EGAS).
CONTRIBUTION: Poster
PLACE: Gothenburg (Sweden)
DATE: 9-13 July 2012

TITLE: *Observable entanglement in composite two-fermion bosons.*
AUTHORS: M.C. Tichy, P.A. Bouvrie, K. Mølmer
CONGRESS: New Trends in Complex Quantum System Dynamics.
CONTRIBUTION: Poster
PLACE: Cartagena (Spain)
DATE: 8-12 April 2013

TITLE: *Mass Effects on the Entanglement Features of an Exactly Soluble Quantum Few-Body System.*
AUTHORS: P.A. Bouvrie, M.C. Tichy, A.P. Majtey, A.R. Plastino, J.S. Dehesa
CONGRESS: 11th European Conference on Atoms, Molecules and Photons (ECAMP11).
CONTRIBUTION: Poster
PLACE: Aarhus (Denmark)
DATE: 24-28 Jun 2013

TITLE: *Bosons Made of Bosons: Condensation of the Whole or Condensation of the Parts?*
AUTHORS: M.C. Tichy, P.A. Bouvrie, K. Mølmer
CONGRESS: MUARC & MPAGS Summer School Quantum Matter: Foundations and new trends.
CONTRIBUTION: Poster
PLACE: Granada (Spain)
DATE: 15-19 September 2013

STAYS ABROAD

PLACE: Aarhus (Dinamarca).
INSTITUTION: Department of Physics and Astronomy, Aarhus University.
DATE: From 23th May to 23th August 2013.
HEAD: Prof. Klaus Mølmer

PLACE: Aarhus (Dinamarca).
INSTITUTION: Department of Physics and Astronomy, Aarhus University.
DATE: From 17th April to 17th July 2012.
HEAD: Prof. Klaus Mølmer

ASSISTANCE TO OTHER SCIENTIFIC MEETINGS

TITLE: *Biomat. Mathematics and Life Sciences: Models of Development.*
ORGANIZER: Programa de posgrado en física y matemáticas (FISYMAT).
PLACE: Universidad de Granada.
DATE: Jun 2010

LANGUAGES

R=Regular, G=Good, C=Correctly

	Speak	Read	Write
SPANISH	C	C	C
ENGLISH	G	G	G

OTHER MERITS

Membership of institutions

- Member of the Royal Spanish Physical Society since 2008.
- Member of the Instituto Carlos I de Física Teórica y Computacional (Universidad de Granada) since 2010.
- Member of the National Freestyle Ski Team, 2001-2003, 2005-2008.
- Member of the C.T.D.I. Andalucía of Freestyle Ski: 2005-2008.
- Founding member of the NGO Asociación Visual para la Libre Expresión (AVLE) since 2008.

Scholarship

TITLE: Sport Scholarship.
INSTITUTION: Fundación Andalucía Olimpica (F.A.O.).
PURPOSE: Sport tecnication for the Winter Olympics Games.
DATE: 2005-2009