

Curriculum Vitae

INFORMAZIONI PERSONALI

Nome FRANCESCO
Cognome CICCARELLO
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FORMAZIONE TITOLI

Formazione

Dottorato di Ricerca in Fisica Applicata, esame finale: 20 Marzo 2007 Università degli Studi di Palermo, Italia

Laurea in Fisica, Novembre 2002, Università degli Studi di Palermo, Italia

Diploma di Maturità Scientifica, Luglio 1994 Liceo Scientifico S. Cannizzaro, Palermo

Carriera Scientifica

09/2012–oggi *Ricercatore*, Università degli Studi di Palermo

03/2011–09/2012 *Borsista post-doc*, Scuola Normale Superiore, Pisa

9/2007–03/2011 *Assegnista di Ricerca*, Dipartimento di Fisica e Tecnologie Relative, Università degli Studi di Palermo

10/2007-3/2008 *Visiting Research Fellow*, School of Mathematics and Physics Queen's University Belfast, Regno Unito

2/2007-8/2007 *Borsista*, Dipartimento di Scienze Fisiche ed Astronomiche, Università degli Studi di Palermo, Italia & CRS NEST National Enterprise for Nanoscience and Nanotechnology Unità operativa di Pisa

1/2004–12/2006 *Studente di Dottorato di Ricerca*, Dipartimento di Fisica e Tecnologie Relative
Università degli Studi di Palermo, Italia

12/2002–12/2003 *Assegnista di Ricerca*, Consiglio Nazionale delle Ricerche (CNR), Istituto di Biofisica,
Palermo

ATTIVITA' DIDATTICA

Tutor per il corso di Meccanica Quantistica, Corso di Laurea in Scienze Fisiche

ASSOCIAZIONI SCIENTIFICHE

Principali collaborazioni

CMI group, Scuola Normale Superiore, Pisa

Controlled Quantum Dynamics Theory Group, Imperial College, Londra (Regno Unito)

Quantum Information Initiative, University College London, Londra (Regno Unito)

Quantum Information Technology Group, Queen's University Belfast, Belfast (Regno Unito)

PUBBLICAZIONE

Submitted manuscripts

A. Farace, F. Ciccarello, R. Fazio, and V. Giovannetti, *Steady-state entanglement activation in optomechanical cavities*, arXiv: 1306.1142

F. Ciccarello, T. Tufarelli, and V. Giovannetti, *Towards computability of trace distance discord*, arXiv: 1304.6879 (2013)

Papers published in ISI peer-reviewed journals

F. Ciccarello, G. M. Palma, and V. Giovannetti, *Collision-model-based approach to non-Markovian quantum dynamics*, Phys. Rev. A 87, 040103(R) (2013)

A. De Pasquale, F. Ciccarello, K. Yuasa, and V. Giovannetti, *Selective writing and read-out of a register of static qubits*, New J. Phys. 15, 043012 (2013)

F. Ciccarello and V. Giovannetti, *A quantum non-Markovian collision model: incoherent swap case*, Phys. Scrip. T153, 014010 (2013)

T. Tufarelli, F. Ciccarello, and M. S. Kim, *Dynamics of spontaneous emission in a single-end photonic waveguide*, Phys. Rev. A 87, 013820 (2013)

F. Ciccarello, D. E. Browne, L. C. Kwek, H. Schomerus, M. Zarcone, and S. Bose, *Quasideterministic realization of a universal quantum gate in a single scattering process*, Phys. Rev. A 85, 050305(R) (2012)

F. Ciccarello and V. Giovannetti, *Local-channel-induced rise of quantum correlations in continuous-variable systems*, Phys. Rev. A 85, 022108 (2012) [p](#)

F. Ciccarello and V. Giovannetti, *Creating quantum correlations through local non-unitary memoryless channels*, Phys. Rev. A 85, 010102(R) (2012)

F. Ciccarello, *Interaction between hopping and static spins in a discrete network*, Phys. Lett. A 375, 2538 (2011)

G. Cordourier-Maruri, F. Ciccarello, Y. Omar, M. Zarcone, R. De Coss and S. Bose, *Implementing quantum gates through scattering between a static and a flying qubit*, Phys. Rev. A 82, 052313 (2010)

F. Ciccarello, *Resonant atom-field interaction in large-size coupled-cavity arrays*, Phys. Rev. A 83, 043802 (2011)

F. Ciccarello, M. Paternostro, S. Bose, D. E. Browne, G. M. Palma and M. Zarcone, *Physical model for the generation of ideal resources in multipartite quantum networking*, Phys. Rev. A 82, 030302(R) (2010)

- F. Ciccarello, S. Bose and M. Zarcone, *Teleportation between distant qubits via scattering of mobile qubits*, Phys. Rev. A 81, 042318 (2010)
- F. Ciccarello, M. Paternostro, G. M. Palma and M. Zarcone, *Reducing quantum control for spin-spin entanglement distribution*, New J. Phys. 11, 113053 (2009)
- F. Ciccarello, M. Paternostro, G. M. Palma and M. Zarcone, *Rising time of entanglement between scattering spins*, Phys. Rev. B 80, 165313 (2009)
- F. Ciccarello, S. Zammito, M. Zarcone, *Hot-electron noise suppression in n-Si via the Hall effect*, J. Stat. Mech. P01042 (2009)
- F. Ciccarello, G. M. Palma, M. Paternostro, M. Zarcone, Y. Omar, *Entanglement generation between two spin-s magnetic impurities in a solid via electron scattering*, Solid State Sciences 11, 931 (2009)
- F. Ciccarello, M. Paternostro, M. S. Kim, G. M. Palma, *Resilience of singlet-state extraction against non-optimal resonance conditions*, Int. J. Quant. Inf. 6, 759 (2008)
- M. Tumminello and F. Ciccarello, *Atomic teleportation via cavity QED and position measurements: efficiency analysis*, Eur. Phys. J. Special Topics 160, 411 (2008)
- F. Ciccarello, M. Paternostro, M. S. Kim, G. M. Palma, *Extraction of singlet states from high-dimensional non-interacting spins*, Phys. Rev. Lett. 100, 150501 (2008)
- M. Tumminello and F. Ciccarello, *Teleportation of atomic states via position measurements*, Phys. Rev. A 77 023825 (2008)
- F. Ciccarello, G. M. Palma, M. Zarcone, *Entanglement-induced electron coherence in a mesoscopic ring with magnetic impurities*, Phys. Rev. B 75, 205415 (2007)
- F. Ciccarello, G. M. Palma, M. Zarcone, Y. Omar, V. R. Vieira, *Effect of static disorder in an electron Fabry-Perot interferometer with two quantum scattering centers*, Las. Phys. 17, 889 (2007)
- F. Ciccarello, G. M. Palma, M. Zarcone, Y. Omar, V. R. Vieira, *Electron Fabry-Perot interferometer with two entangled magnetic impurities*, J. Phys. A: Math. Theor. 40, 7993 (2007)
- F. Ciccarello, G. M. Palma, M. Zarcone, Y. Omar, V. R. Vieira, *Entanglement controlled*

single-electron transmittivity, New J. Phys. 8, 214 (2006)

F. Ciccarello and M. Zarcone, *Hot electron noise in n-type GaAs in crossed electric and magnetic fields*, J. Appl. Phys. 99, 113702 (2006)

F. Ciccarello, E. Karpov, R. Passante, *Exactly solvable model of two three-dimensional harmonic oscillators interacting with the quantum electromagnetic field: The far-zone Casimir-Polder potential*, Phys. Rev. A 72, 052106 (2005)

F. Ciccarello, A. Napoli, A. Messina, S. R. Lüthi, *A microscopic monomeric mechanism interpreting intrinsic optical bistability observed in Yb³⁺-doped bromide materials*, J. Opt. B: Quantum and Semiclass. Opt. 6, S118 (2004)

F. Ciccarello, A. Napoli, A. Messina, S. R. Lüthi, *A New interpretation of intrinsic optical bistability observed in Yb³⁺-doped bromide materials*, Chem. Phys. Lett. 381, 163 (2003)

ISI Conference proceedings

F. Ciccarello and M. Zarcone, *Transverse velocity fluctuations of hot electrons in n-type GaAs in crossed electric and magnetic fields by Monte Carlo methods*, AIP Conf. Proc. 800, 492 (2005)

F. Ciccarello and M. Zarcone, *Hot electron noise in n-type semiconductors in crossed electric and magnetic fields*, AIP Conf. Proc. 780, 159 (2005)

AMBITI DI RICERCA

Implementazioni di protocolli per il processamento dell'informazione quantistica

Elettrodinamica quantistica in guide d'onda unidimensionali

Correlazioni quantistiche in assenza di entanglement

Dinamica non-Markoviana di sistemi aperti quantistici