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Nationality: **Italian**
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This CV: updated 07/01/2025

RESUMEE

Starting 1st of November 2024, Prof. Fabrizio Illuminati is serving as Director of the Italian Institute of Nanotechnology - NANOTEC of the National Research Council (CNR - Consiglio Nazionale delle Ricerche).
Fabrizio Illuminati is full professor of theoretical physics, principal investigator, and leader of the Quantum Physics research group at the University of Salerno since 2015, currently on leave of absence as Director of the CNR NANOTEC Institute.
He has contributed to various aspects of the theory of quantum information and computation, quantum technologies, and quantum collective phenomena, establishing seminal results in the theory of Bell nonlocality, entanglement, and quantum resources in atomic physics, quantum optics, quantum matter, and quantum gravity models.
Prof. Illuminati has been European Coordinator of several EU Research Projects of the European Union, and is active in several national and international Research Projects and Evaluation Committees.
Prof. Illuminati is also currently serving as Chair of the Commission for Scientific Research of the National University Council of Italy, the representative body of Italian Universities at MUR (Ministry of the Italian Government for University and Scientific Research).

ACADEMIC POSITION

-October 2015 - Present: ***Full Professor*** of theoretical physics,
Dipartimento di Ingegneria Industriale, Università degli Studi di Salerno.

GOVERNANCE - ACADEMIC AND SCIENTIFIC LEADERSHIPS

- November 2024 - Present: Director, Italian Institute of Nanotechnology of the National Research Council (**CNR**).

- September 2023 – Present : Chair, Commission for Scientific Research, National University Council (**CUN**), Ministry for University and Research (**MUR**) of the Italian Republic.

- January 2019 - August 2023: Coordinator, Scientific Committee Area 02 – Physics, National University Council (**CUN**), Ministry for University and Research (**MUR**) of the Italian Republic.

RESEARCH FIELDS AND CURRENT RESEARCH INTERESTS

- Fundamental concepts in quantum information and quantum computation science.
- Quantum resource theories.
- Nonlocality, entanglement, and coherence in minimal-length quantum mechanics, models of quantum gravity phenomenology, and holography.
- Theory of classical and quantum-like fluctuations in astrophysical and cosmological structures.
- Quantum optical realizations of classical, quantum, and hybrid neural networks.
- Quantum engineering and quantum technologies, including quantum sensing and metrology, quantum illumination, quantum state estimation, and quantum simulations.
- Theory of topological quantum systems and complex quantum matter.
- Theory and design of quantum batteries and other quantum- and nano-enhanced energy systems.
- Methods of statistical mechanics in physics, nanotechnology, biology, and ICT.

PUBLICATIONS AND BIBLIOMETRICS:

• 142 total publications in international peer-reviewed scientific journals, including:
18 Physical Review Letters, 1 Nature Physics, 1 Nature Communications, 1 Physics Reports.
• 6030 citations according to the Web-of-Science (WoS) (8985 according to Google Scholar).
• H-index = 41 in WoS (= 47 in Google Scholar).

LEADERSHIP AND MANAGEMENT OF INTERNATIONAL SCIENTIFIC PROJECTS

2013-2017: European Coordinator – EU FET Project EQuaM –"Emulators of Quantum Frustrated Magnetism"
2011-2015: Salerno Unit Coordinator – EU FET Project iQIT – "Integrated Quantum Technologies"
2008-2012: European Coordinator – EU FET Project HIP – "Hybrid Information Processing"

LEADERSHIP AND MANAGEMENT OF NATIONAL RESEARCH FUNDS

2023 - Present: Principal Investigator - Salerno Unit - National Research Project PRIN - Harnessing Topological Phases for Quantum Technologies
2019 - 2023: Principal Investigator - Salerno Unit - National Research Project PRIN – Taming Complexity with Quantum Strategies: a Hybrid Integrated Photonics Approach
2013 - 2016: Principal Investigator - Salerno Unit - National Research Project PRIN – Quantum Simulators of Strongly Correlated Systems
2007 - 2010: Principal Investigator - Salerno Unit - National Research Project PRIN – Cooperative Quantum Phenomena in Atomic Systems: from Chips to Optical Lattices

OFFERED INTERNATIONAL ACADEMIC POSITIONS

2013: Tenured Professorship (Full Professor) - Quantum Physics and Quantum Optics – University of Sussex (Brighton), United Kingdom.
2011: Tenured W-3 Professorship (Full Professor) - Theoretical Physics - Universitaet Siegen (Frankfurt), Germany.

PREVIOUS ACADEMIC POSITIONS

2007 - 2015	***Associate Professor*** of theoretical physics, Dipartimento di Fisica, Università degli Studi di Salerno
1996 - 2007	***Researcher*** of condensed matter physics, Dipartimento di Fisica, Università degli Studi di Salerno
2003 - 2004	***Visiting Professor***, Universitaet Potsdam, Potsdam, Germany.
1997 - 2000	***Fellow*** of the Alexander von Humboldt Stiftung, Universitaet Konstanz, Germany.
1993 - 1996	***Post-Doctoral Fellow***, Università degli Studi di Padova, Padua, Italy.
1991 - 1993	***Fellow*** of the Royal Norwegian Academy of Sciences, University of Oslo, Oslo, Norway.

EDUCATION

1988-1991	*PhD in Physics*, University of Padua, Italy
1982-1987	*Laurea degree (Master's degree) in Physics*, with grade 110/110 *cum laude* Università di Roma "La Sapienza", Italy

SCIENTIFIC ASSOCIATIONS

Since 01/01/2007: Senior Research Scientist, ISI Foundation (Institute for Scientific Interchange), Turin (IT).
Since 01/11/2011: Principal Investigator, CNISM (National Italian Consortium of Condensed Matter Physics).
Since 01/10/2023: Member of the Board of Directors of the SISTEQ – Italian Society for Quantum Science and Quantum Technologies.

ORGANISATION OF INTERNATIONAL SCIENTIFIC SCHOOLS AND MEETINGS

2017	***Director*** – ICTP Advanced School on Quantum Science and Quantum Technologies, Trieste.
2016	***Co-Chair*** - QBEC International Conference on Ultracold Quantum Gases, Salerno.
2014	***Chair*** - IQIS International Conference on Quantum Information, Salerno.

EVALUATION ACTIVITIES

Member of various evaluation panels and committees for personnel hiring at all levels (PhD, Post-doctoral fellows, tenured positions). Evaluator of grant proposals for the European Union, the European Science Foundation, MIUR, and CNR.

EDITORIAL BOARDS

August 2023 – present: member of the Editorial Board of the international peer-reviewed journal "Entropy"

PEER REVIEW

Referee for various top international scientific journals, including Reviews of Modern Physics, Nature Physics, Nature Communications, Physical Review Letters, New Journal of Physics, Physical Review A, Physical Review B, Europhysics Letters, Annals of Physics (NY), Journal of Physics A, Journal of Physics B, Journal of Physics: Condensed Matter, Physics Letters A, Optics Communications, Optics Express, Physica Scripta.

NOTABLE MASTER THESES, PHD STUDENTS, AND POSTDOCTORAL FELLOWS

Among many others:
Gerardo Adesso (currently professor, University of Nottingham, Nottingham, UK),
Salvatore M. Giampaolo (currently Research Fellow, Ruder Boskovic Institute, Zagreb, Croatia),
Alessio Serafini (currently professor, University College London, London, UK).

TEACHING ACTIVITIES

Undergraduate and graduate courses at all levels. These have included and/or include:

- Quantum information and quantum computation for graduate students in informatics;
- Fundamentals of quantum information for mathematics and physics graduate students;
- Mathematical methods of quantum mechanics for mathematics and physics graduate students;
- Statistical mechanics for graduate students in mathematics, physics, and engineering;
- Network science and statistical mechanics of complex systems for data science students;
- Introductory general physics for undergraduate students in engineering;
- Elements of quantum optics and photonics for physics undergraduate and graduate students.

Each course is on a semester basis, with a typical number of four to six hours per week, and fifty contact hours for a typical course.

PUBLICATIONS IN PEER-REVIEWED INTERNATIONAL JOURNALS

[142] M. Blasone, F. Illuminati, L. Petruzziello, K. Simonov, and L. Smaldone: "*Tests of macrorealism in meson oscillation physics*", Physical Review A **109**, 062209 (2024).

[141] L. Petruzziello and F. Illuminati: "*Gravitationally modulated quantum correlations: Discriminating classical and quantum models of ultra-compact objects with Bell nonlocality*", Physics Letters B **853**, 138652 (2024).

[140] P. Bosso, F. Illuminati, L. Petruzziello, and F. Wagner: "*Bell nonlocality in maximal-length quantum mechanics*", Physics Letters B **845**, 138131 (2023).

[139] M. Blasone, F. Illuminati, L. Petruzziello, and L. Smaldone: "*Leggett-Garg inequalities in the quantum field theory of neutrino oscillations*", Physical Review A **108**, 032210 (2023).

[138] M. Blasone, F. Illuminati, L. Petruzziello, K. Simonov, and L. Smaldone: "*No-signaling-in-time as a condition for macrorealism: the case of neutrino oscillations*", The European Physical Journal C **83**, 688 (2023).

[137] E. Al-Nasrallah, S. Das, F. Illuminati, L. Petruzziello, and E. C. Vagenas: "*Discriminating quantum gravity models by gravitational decoherence*", Nuclear Physics B **992**, 116246 (2023).

[136] P. Bosso, L. Petruzziello, F. Wagner, and F. Illuminati: "*Spin operator, Bell nonlocality and Tsirelson bound in quantum-gravity induced minimal-length quantum mechanics*", Communications Physics **6**, 114 (2023).

[135] A. Maiellaro, F. Romeo, R. Citro, and F. Illuminati: "*Squashed entanglement in one-dimensional quantum matter*", Physical Review B **107**, 115160 (2023).

[134] A. Maiellaro, F. Romeo, F. Illuminati, and R. Citro: "*Resilience of topological superconductivity under particle current*", Physical Review B **107**, 064505 (2023).

[133] F. Illuminati, G. Lambiase, and L. Petruzziello: "*Neutrino Dynamics in a Quantum-Corrected Schwarzschild Spacetime*", Universe **8**, 202 (2022).

[132] A. Maiellaro, F. Illuminati, and R. Citro: "*Topological Phases of an Interacting Majorana Benalcazar–Bernevig–Hughes Model*", Condensed Matter **7**, 26 (2022).

[131] A. Maiellaro, F. Romeo, and F. Illuminati: "*Edge states, Majorana fermions and topological order in superconducting wires with generalized boundary conditions*", Physical Review B **106**, 155407 (2022).

[130] P. S. Tarabunga, T. Mendes-Santos, F. Illuminati, and M. Dalmonte: "*Finite-temperature quantum discordant criticality*", Physical Review B **105**, 075104 (2022).

[129] A. Maiellaro, A. Marino, and F. Illuminati: "*Topological squashed entanglement: nonlocal order parameter for one-dimensional topological superconductors*", Physical Review Research **4**, 033088 (2022).

[128] M. Blasone, F. Illuminati, G. G. Luciano, and L. Petruzziello: "*Flavor-vacuum entanglement in boson mixing*", Physical Review A **103**, 032434 (2021).

[127] V. A. S. V. Bittencourt, M. Blasone, F. Illuminati, G. Lambiase, G. G. Luciano, and L. Petruzziello: "*Quantum nonlocality in extended theories of gravity*", Physical Review D **103**, 044051 (2021).

[126] F. Illuminati, G. Lambiase, and L. Petruzziello: "*Spontaneous Lorentz symmetry violation from infrared gravity*", Symmetry **13**, 1854 (2021).

[125] L. Fasolo, A. Greco, E. Enrico, F. Illuminati, R. Lo Franco, D. Vitali, and P. Livreri: "*Josephson travelling wave parametric amplifiers as non-classical light source for microwave quantum illumination*", Measurement: Sensors **18**, 100349 (2021).

[124] L. Petruzziello and F. Illuminati: "*Quantum gravitational decoherence from fluctuating minimal length and deformation parameter at the Planck scale*", Nature Communications **12**, 449 (2021).

[123] F. Dell'Anno, D. Buono, G. Nocerino, S. De Siena, and F. Illuminati: "*Non-Gaussian swapping of entangled resources*", Quantum Information Processing **18**, 1 (2019).

[122] L. Ferro, R. Fazio, F. Illuminati, G. Marmo, S. Pascazio, and V. Vedral: "*Measuring quantumness: from theory to observability in interferometric setups*", The European Physical Journal D **72**, 1 (2018).

[121] G. Torre and F. Illuminati: “*Exact non-Markovian dynamics of Gaussian quantum channels: Finite-time and asymptotic regimes*”, Physical Review A **98,** 012124 (2018).

[120] D. Spehner, F. Illuminati, M. Orszag, and W. Roga: “*Geometric measures of quantum correlations with Bures and Hellinger distances*”, in “*Lectures on general quantum correlations and their applications*”, edited by F. F. Fanchini, D. de Oliveira Soares Pinto, and G. Adesso, pp. 105 - 157 (Springer, New York Berlin, 2017).

[119] W. Roga, D. Spehner, and F. Illuminati: “*Geometric measures of quantum correlations: characterization, quantification, and comparison by distances and operations*”, Journal of Physics A: Mathematical and Theoretical **49**, 235301 (2016).

[118] A. Hamma, S. M. Giampaolo, and F. Illuminati: “*Mutual information and spontaneous symmetry breaking*”, Physical Review A **93**, 012303 (2016).

[117] M. Blasone, F. Dell'Anno, S. De Siena, and F. Illuminati: “*Flavour entanglement in neutrino oscillations in the wave packet description*”, Europhysics Letters **112**, 20007 (2015).

[116] G.Torre, W. Roga, and F. Illuminati: “*Non-Markovianity of Gaussian Channels*”, Physical Review Letters **115**, 070401 (2015).

[115] S. M. Giampaolo, B. C. Hiesmayr, and F. Illuminati: “*Global-to-local incompatibility, monogamy of entanglement, and ground-state dimerization: Theory and observability of quantum frustration in systems with competing interactions*”, Physical Review B **92**, 144406 (2015).

[114] S. Zippilli, M. Grajcar, E. Il'ichev, and F. Illuminati: “*Simulating long-distance entanglement in quantum spin chains by superconducting flux qubits*”, Physical Review A **91**, 022315 (2015).

[113] W. Roga, D. Buono, and F. Illuminati: “*Device-independent quantum reading and noise-assisted quantum transmitters*”, New Journal of Physics **17**, 013031 (2015).

[112] W. Roga, S. M. Giampaolo, and F. Illuminati: “*Discord of response*”, Journal of Physics A: Mathematical and Theoretical **47**, 365301 (2014).

[111] S. Zippilli, M. Johanning, S. M. Giampaolo, Ch. Wunderlich, and F. Illuminati: “*Adiabatic quantum simulation with a segmented ion trap: Application to long-distance entanglement in quantum spin systems*”, Physical Review A **89**, 042308 (2014).

[110] S. Zippilli and F. Illuminati: “*Non-Markovian dynamics and steady-state entanglement of cavity arrays in finite-bandwidth squeezed reservoirs*”, Physical Review A **89**, 033803 (2014).

[109] H. Habibian, S. Zippilli, F. Illuminati, and G. Morigi: “*Stationary entanglement of photons and atoms in a high-finesse resonator*”, Physical Review A **89**, 023832 (2014).

[108] M. Blasone, F. Dell’Anno, S. De Siena, and F. Illuminati: “*A field-theoretical approach to entanglement in neutrino mixing and flavour oscillations*”, Europhysics Letters **106**, 30002 (2014).

[107] A. Capolupo, S. M. Giampaolo, and F. Illuminati: “*Theory of warm ionized gases: Equation of state and kinetic Schottky anomaly*”, Physical Review E **88**, 042132 (2013).

[106] F. Dell'Anno, D. Buono, G. Nocerino, A. Porzio, S. Solimeno, S. De Siena, and F. Illuminati: “*Tunable non-Gaussian resources for continuous-variable quantum technologies*”, Physical Review A **88**, 043818 (2013).

[105] S. M. Giampaolo, S. Montangero, F. Dell'Anno, S. De Siena, and F. Illuminati: "*Universal aspects in the behavior of the entanglement spectrum in one dimension: Scaling transition at the factorization point and ordered entangled structures*", Physical Review B **88**, 125142 (2013).

[104] A. Bayat, S. M. Giampaolo, F. Illuminati, and M. B. Plenio: "*Entanglement amplification in the non-perturbative dynamics of modular quantum systems*", Physical Review A **88**, 022319 (2013).

[103] U. Marzolino, S. M. Giampaolo, and F. Illuminati: "*Frustration, entanglement, and correlations in quantum many-body systems*", Physical Review A **88**, 020301 (2013).

[102] S. Zippilli, S. M. Giampaolo, and F. Illuminati: "*Surface entanglement in quantum spin networks*", Physical Review A **87**, 042304 (2013).

[101] S. Zippilli, M. Paternostro, G. Adesso, and F. Illuminati: "*Entanglement Replication in Driven Dissipative Many-Body Systems*", Physical Review Letters **110**, 040503 (2013).

[100] S. M. Giampaolo, A. Streltsov, W. Roga, D. Bruß, and F. Illuminati: "*Quantifying nonclassicality: Global impact of local unitary evolutions*", Physical Review A **87**, 012313 (2013).

[99] S. M. Giampaolo, G. Gualdi, A. Monras, and F. Illuminati: "*Characterizing and Quantifying Frustration in Quantum Many-Body Systems*", Physical Review Letters **107**, 260602 (2011).

[98] R. Franzosi, S. M. Giampaolo, F. Illuminati, R. Livi, G.-L. Oppo, and A. Politi: "*Localization of Bose-Einstein Condensates in Optical Lattices*", Central European Journal of Physics **9**, 1248 (2011).

[97] A. Monras, G. Adesso, S. M. Giampaolo, G. Gualdi, G. B. Davies, and F. Illuminati: "*Entanglement Quantification by Local Unitary Operations*", Physical Review A **84**, 012301 (2011).

[96] G. Gualdi, S. M. Giampaolo, and F. Illuminati: "*Modular Entanglement*", Physical Review Letters **106**, 050501 (2011).

[95] A. Monras and F. Illuminati: "*Measurement of Damping and Temperature: Precision Bounds in Gaussian Dissipative Channels*", Physical Review A **83**, 012315 (2011).

[94] F. Dell'Anno, S. De Siena, G. Adesso, and F. Illuminati: "*Teleportation of Squeezing: Optimization Using non-Gaussian Resources*", Physical Review A **82**, 062329 (2010).

[93] R. Franzosi, S. M. Giampaolo, and F. Illuminati: "*Quantum Localization and Bound-state Formation in Bose-Einstein Condensates*", Physical Review A **82**, 063620 (2010).

[92] A. Monras and F. Illuminati: "*Information geometry of Gaussian channels*", Physical Review A **81**, 062326 (2010).

[91] G. Adesso, S. Campbell, F. Illuminati, and M. Paternostro: "*Controllable Gaussian-Qubit Interface for Extremal Quantum State Engineering*", Physical Review Letters **104**, 240501 (2010).

[90] S. M. Giampaolo, G. Adesso, and F. Illuminati: "*Probing Quantum Frustrated Systems via Factorization of the Ground State*", Physical Review Letters **104**, 207202 (2010).

[89] S. M. Giampaolo and F. Illuminati: "*Long-distance entanglement in many-body atomic and optical systems*", New Journal of Physics **12**, 025019 (2010).

[88] F. Dell'Anno, S. De Siena, and F. Illuminati: "*Realistic continuous-variable quantum teleportation with non-Gaussian resources*", Physical Review A **81**, 012333 (2010).

[87] S. M. Giampaolo and F. Illuminati: "*Long-distance entanglement and quantum teleportation in coupled-cavity arrays*", Physical Review A **80**, 050301(R) (2009).

[86] S. M. Giampaolo, G. Adesso, and F. Illuminati: "*Separability and ground-state factorization in quantum spin systems*", Physical Review B **79**, 224434 (2009).

[85] P. Buonsante, S. M. Giampaolo, F. Illuminati, V. Penna, and A. Vezzani: "*Unconventional quantum phases in lattice bosonic mixtures*", European Physical Journal B **68**, 427 (2009).

[84] G. Adesso, F. Dell'Anno, S. De Siena, F. Illuminati, and L. A. M. Souza: "*Optimal estimation of losses at the ultimate quantum limit with non-Gaussian states*", Physical Review A **79**, 040305(R) (2009).

[83] M. Blasone, F. Dell'Anno, S. De Siena, and F. Illuminati: "*Entanglement in neutrino oscillations*", Europhysics Letters **85**, 50002 (2009).

[82] G. Adesso and F. Illuminati: "*Genuine multipartite entanglement of symmetric Gaussian states: Strong monogamy, unitary localization, scaling behavior, and molecular sharing structure*", Physical Review A **78**, 042310 (2008).

[81] F. Dell'Anno, S. De Siena, L. A. Farias, and F. Illuminati: "*Continuous-variable quantum teleportation with sculptured and noisy non-Gaussian resources*", European Physical Journal - Special Topics **160**, 115 (2008).

[80] P. Buonsante, S. M. Giampaolo, F. Illuminati, V. Penna, and A. Vezzani: "*Mixtures of Strongly Interacting Bosons in Optical Lattices*", Physical Review Letters **100**, 240402 (2008).

[79] M. Blasone, F. Dell'Anno, S. De Siena, and F. Illuminati: "*Hierarchies of geometric entanglement*", Physical Review A **77**, 062304 (2008).

[78] S. M. Giampaolo, G. Adesso, and F. Illuminati: "*Theory of Ground State Factorization in Quantum Cooperative Systems*", Physical Review Letters **100**, 197201 (2008).

[77] M. Blasone, F. Dell'Anno, S. De Siena, M. Di Mauro, and F. Illuminati: "*Multipartite entangled states in particle mixing*", Physical Review D **77**, 096002 (2008).

[76] S. M. Giampaolo, F. Illuminati, P. Verrucchi, and S. De Siena: "*Determination of ground-state properties in quantum spin systems by single-qubit unitary operations and entanglement excitation energies*", Physical Review A **77**, 012319 (2008).

[75] L. Campos Venuti, S. M. Giampaolo, F. Illuminati, and P. Zanardi: "*Long-distance entanglement and quantum teleportation in XX spin chains*", Physical Review A **76**, 052328 (2007).

[74] G. Adesso, S. M. Giampaolo, and F. Illuminati: "*Geometric characterization of separability and entanglement in pure Gaussian states by single-mode unitary operations*", Physical Review A **76**, 042334 (2007).

[73] S. M. Giampaolo and F. Illuminati: "*Characterization of separability and entanglement in (2xD)- and (3xD)-dimensional systems by single-qubit and single-qutrit unitary transformations*", Physical Review A **76**, 042301 (2007).

[72] G. Adesso and F. Illuminati: "*Strong Monogamy of Bipartite and Genuine Multipartite Entanglement: The Gaussian Case*", Physical Review Letters **99**, 150501 (2007).

[71] G. Adesso, M. Ericsson, and F. Illuminati: "*Coexistence of unlimited bipartite and genuine multipartite entanglement: Promiscuous quantum correlations arising from discrete to continuous-variable systems*", Physical Review A **76**, 022315 (2007).

[70] F. Dell'Anno, S. De Siena, L. A. Farias, and F. Illuminati: "*Continuous-variable quantum teleportation with non-Gaussian resources*", Physical Review A **76**, 022301 (2007).

[69] G. Adesso and F. Illuminati: "*Entanglement in continuous-variable systems: Recent advances and current perspectives*", Journal of Physics A: Mathematical and Theoretical **40**, 7821 (2007).
Invited review article. Institute of Physics Publishing's "highlight".

[68] G. Adesso, A. Serafini, and F. Illuminati: "*Optical state engineering, quantum communication, and robustness of entanglement promiscuity in three-mode Gaussian states*", New Journal of Physics **9**, 60 (2007).

[67] T. Hiroshima, G. Adesso, and F. Illuminati: "*Monogamy inequality for distributed Gaussian entanglement*", Physical Review Letters **98**, 050503 (2007).

[66] G. Adesso, A. Serafini, and F. Illuminati: "*Continuous variable quantum information with three-mode Gaussian states: Allotment, trade-off, teleportation, and telecloning*", ICQNM-07, 7 (2007).

[65] F. Illuminati: "*Quantum optics: Light does matter*", Nature Physics **2**, 803 (2006). Invited "News and Views" review article on the work by M. Hartmann, F. G. S. L. Brandao, and M. B. Plenio on the realization of quantum phase transitions by strongly interacting polaritons in coupled arrays of optical cavities [Nature Physics **2**, 849 (2006)].

[64] F. Dell'Anno, S. De Siena, and F. Illuminati: "*Test of Inseparability Criteria for Squeezed Number States of the Radiation Field*", Open Systems and Information Dynamics **13**, 383 (2006).

[63] N. Cufaro Petroni, S. De Martino, S. De Siena, and F. Illuminati: "*Lévy-Student processes for a stochastic model of beam halos*", Nuclear Instruments and Methods A **561**, 237 (2006).

[62] S. M. Giampaolo, F. Illuminati, A. Di Lisi, and G. Mazzarella: "*Massive Quantum Memories by Periodically Inverted Dynamic Evolutions*", International Journal of Quantum Information **4**, 507 (2006).

[61] G. Adesso and F. Illuminati: "*Entanglement sharing: From qubits to Gaussian states*", International Journal of Quantum Information **4**, 383 (2006).

[60] S. M. Giampaolo, F. Illuminati, A. Di Lisi, and S. De Siena: "*Engineering massive quantum memories by topologically time-modulated spin rings*", Laser Physics **16**, 1411 (2006).

[59] F. Dell'Anno, S. De Siena, and F. Illuminati: "*Multiphoton quantum optics and quantum state engineering*", Physics Reports **428**, 53 (2006). Invited review article.

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[57] S. M. Giampaolo, F. Illuminati, and G. Mazzarella: "*Extended Bose-Hubbard model of interacting bosonic atoms in optical lattices: From superfluidity to density waves*", Physical Review A **73**, 013625 (2006).

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[55] N. Cufaro Petroni, S. De Martino, S. De Siena, and F. Illuminati: "*Lévy-Student distributions for halos in accelerator beams*", Physical Review E **72**, 066502 (2005).

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[53] S. M. Giampaolo, F. Illuminati, and G. Mazzarella: "*Storing quantum information in XXZ spin rings with periodically time-controlled interactions*", Journal of Optics B: Quantum and Semiclassical Optics **7**, S337 (2005).

[52] G. Adesso and F. Illuminati: "*Equivalence between entanglement and the optimal fidelity of continuous variable teleportation*", Physical Review Letters **95**, 150503 (2005).

[51] G. Adesso and F. Illuminati: "*Gaussian measures of entanglement versus negativities: Ordering of two-mode Gaussian states*", Physical Review A **72**, 032334 (2005).

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[49] G. Adesso, A. Serafini, and F. Illuminati: "*Entanglement, purity, and information entropies in continuous variable systems*", Open Systems & Information Dynamics **12**, 189 (2005).

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