

## Publication list of Rosanna Migliore

### International Scientific Publications

1. Bianchi, D., Migliore, R., Vitale, P., Garad, M., Pousinha, P., Marie, H., Lessmann, V., Migliore, M., Dynamic modulation of the membrane electrical properties of mouse hippocampal CA1 pyramidal neurons during strong and sustained inputs **(2021)** *Front. Cell. Neurosci.*, *Under review*.
2. Vitale, P., Salgueiro-Pereira, A.R., Lupascu, C.A., Migliore, R., Migliore, M., Marie, H., Analysis of age-dependent alterations in excitability properties of CA1 pyramidal neurons in an APPS1 model of Alzheimer's disease **(2021)** *Front. Aging Neurosci.*, *in press*.
3. Sáray, S., Rössert, C.A., Appukuttan, S., Migliore, R., Vitale, P., Lupascu, C.A., Bologna, L.L., Van Geit, W., Romani, A., Davison, A.P., Muller, E., Freund, T.F., Káli, S., HippoUnit: A software tool for the automated testing and systematic comparison of detailed models of hippocampal neurons based on electrophysiological data **(2021)** *PLoS Computational Biology* **17**(1): e1008114. doi: 10.1371/pcbi.1008114
4. McCauley, J.P., Petroccione, M.A., D'Brant, L.Y., Todd, G.C., Affinnih, N., Wisnoski, J.J., Zahid, S., Shree, S., Sousa, A.A., De Guzman, R.M., Migliore, R., Brazhe, A., Leapman, R.D., Khmaladze, A., Semyanov, A., Zuloaga, D.G., Migliore, M., Scimemi, A. Circadian Modulation of Neurons and Astrocytes Controls Synaptic Plasticity in Hippocampal Area CA1 **(2020)** *Cell Rep.* **33**(2):108255. doi: 10.1016/j.celrep.2020.108255.
5. Migliore, R., Lupascu, C.A., Bologna, L.L., Romani, A., Courcol, J.-D., Antonel, S., Van Geit, W.A.H., Thomson, A.M., Mercer, A., Lange, S., Falck J., Rössert, C.A., Shi, Y., Hagens, O., Pezzoli, M., Freund, T.F., Kali, S., Muller, E.B., Schürmann, F., Markram, H., Migliore, M. The physiological variability of channel density in hippocampal CA1 pyramidal cells and interneurons explored using a unified data-driven modeling workflow **(2018)** *PLoS Computational Biology* **14**(9), e1006423 DOI:10.1371/journal.pcbi.1006423
6. Migliore, R., De Simone, G., Leinekugel, X., Migliore, M. The possible consequences for cognitive functions of external electric fields at power line frequency on hippocampal CA1 pyramidal neurons **(2017)** *European Journal of Neuroscience* **45**(8), pp. 1024-1031 DOI:10.1111/ejn.13325.
7. Cellot, G., Maggi, L., Di Castro, M.A., Catalano, M., Migliore, R., Migliore, M., Scattoni, M.L., Calamandrei, G., Cherubini, E. Premature changes in neuronal excitability account for hippocampal network impairment and autistic-like behavior in neonatal BTBR T+tf/J mice **(2016)** *Scientific Reports* **6**, 31696 DOI:10.1038/srep31696.
8. Lupascu, C.A., Morabito, A., Merenda, E., Marinelli, S., Marchetti, C., Migliore, R., Cherubini, E., Migliore, M. A general procedure to study subcellular models of transsynaptic signaling at inhibitory synapses **(2016)** *Frontiers in Neuroinformatics* **10**, 23 DOI:10.3389/fninf.2016.00023.
9. Migliore, M., De Simone, G., Migliore, R. Effect of the initial synaptic state on the probability to induce long-term potentiation and depression **(2015)** *Biophysical Journal* **108**, 1038-1046. DOI:10.1016/j.bpj.2014.12.048.
10. Miceli, F., Soldovieri, M.V., Ambrosino, P., De Maria, M., Migliore, M., Migliore, R., Tagliatela, M. Early-onset epileptic encephalopathy caused by gain-of-function mutations in the voltage sensor of K(v)7.2 and K(v)7.3 potassium channel subunits **(2015)** *Journal of Neuroscience* **35**, 3782-3793. DOI:10.1523/JNEUROSCI.4423-14.2015.
11. Chiarello, F., Spilla, S., Castellano, M.G., Cosmelli, C., Messina, A., Migliore, R., Napoli, A., Torrioli, G. Resonant effects in a SQUID qubit subjected to nonadiabatic changes **(2014)** *Physical Review B - Condensed Matter and Materials Physics* **89** DOI:10.1103/PhysRevB.89.134506.
12. Migliore, R., Scala, M., Napoli, A., Messina, A. Master equations for two qubits coupled via a nonlinear mode **(2013)** *Journal of Engineering Mathematics* **82**, 187-197. DOI:10.1007/s10665-012-9615-4.

13. Migliore, M., Migliore, R. Know your current Ih: Interaction with a shunting current explains the puzzling effects of its pharmacological or pathological modulations (2012) *PLoS ONE* **7**(5), e36867 DOI:10.1371/journal.pone.0036867.
14. Spilla, S., Migliore, R., Scala, M., Napoli, A. GHZ state generation of three Josephson qubits in the presence of bosonic baths (2012) *Journal of Physics B: Atomic, Molecular and Optical Physics* **45** DOI:10.1088/0953-4075/45/6/065501. +1
15. Dodonov, A.V., Nardo, R.L., Migliore, R., Messina, A., Dodonov, V.V. Analytical and numerical analysis of the atom-field dynamics in non-stationary cavity QED (2011) *Journal of Physics B: Atomic, Molecular and Optical Physics* **44** DOI:10.1088/0953-4075/44/22/225502.
16. Scala, M., Ferraro, E., Napoli, A., Messina, A., Sánchez-Soto, L.L., Migliore, R. Dissipative dynamics of two coupled qubits: A short review of some recent results (2011) *Optics and Spectroscopy* **111**, 553-557. DOI:10.1134/S0030400X111110245.
17. Migliore, M., De Blasi, I., Tegolo, D., Migliore, R. A modeling study suggesting how a reduction in the context-dependent input on CA1 pyramidal neurons could generate schizophrenic behavior (2011) *Neural Networks* **24**, 552-559. DOI:10.1016/j.neunet.2011.01.001.
18. Migliore, R., Scala, M., Napoli, A., Yuasa, K., Nakazato, H., Messina, A. Dissipative effects on a generation scheme of a W state in an array of coupled Josephson junctions (2011) *Journal of Physics B: Atomic, Molecular and Optical Physics* **44** DOI:10.1088/0953-4075/44/7/075503.
19. Scala, M., Migliore, R., Messina, A., Sánchez-Soto, L.L. Robust stationary entanglement of two coupled qubits in independent environments (2011) *European Physical Journal D* **61**, 199-205. DOI:10.1140/epjd/e2010-00230-5.
20. Ferraro, E., Scala, M., Migliore, R., Napoli, A. On the validity of non-Markovian master equation approaches for the entanglement dynamics of two-qubit systems (2010) *Physica Scripta* **T140** DOI:10.1088/0031-8949/2010/T140/014042.
21. Ferraro, E., Scala, M., Migliore, R., Napoli, A. Non-Markovian dissipative dynamics of two coupled qubits in independent reservoirs: Comparison between exact solutions and master-equation approaches (2009) *Physical Review A - Atomic, Molecular, and Optical Physics* **80** DOI:10.1103/PhysRevA.80.042112.
22. Jivulescu, M.A., Migliore, R., Messina, A. Electromagnetic control of dynamical localization conditions in 1D lattices with long-range intersite interactions (2009) *International Journal of Quantum Information* **7**, 149-154. DOI:10.1142/S0219749909004815.
23. Migliore, R., Scala, M., Guccione, M., Sánchez-Soto, L.L., Messina, A. Nonclassical correlations in superconducting circuits (2009) *Physica Status Solidi (B) Basic Research* **246**, 1013-1017. DOI:10.1002/pssb.200881564. +1
24. Scala, M., Migliore, R., Messina, A. Dissipation and entanglement dynamics for two interacting qubits coupled to independent reservoirs (2008) *Journal of Physics A: Mathematical and Theoretical* **41** DOI:10.1088/1751-8113/41/43/435304.
25. Migliore, R., Messina, A. Single and two-qubit dynamics in circuit QED architectures (2008) *European Physical Journal: Special Topics* **159**, 101-111. DOI:10.1140/epjst/e2008-00698-6. +1
26. Migliore, R., Yuasa, K., Guccione, M., Nakazato, H., Messina, A. Diffusion and transfer of entanglement in an array of inductively coupled flux qubits (2007) *Physical Review B - Condensed Matter and Materials Physics* **76** DOI:10.1103/PhysRevB.76.052501.
27. Migliore, R., Messina, A., Sánchez-Soto, L.L. Step-by-step control of the dynamics of a superconducting QED-like system (2007) *Open Systems and Information Dynamics* **14**, 197-202. DOI:10.1007/s11080-007-9048-0.
28. Migliore, R., Messina, A. Generation of entangled states of two distant cavity modes via Josephson junction based devices (2007) *International Journal of Quantum Information* **5**, 83-88.

29. Konstadopoulou, A., Migliore, R., Zukarnain, Z.A., Vourdas, A., Messina, A. Time Evolution of two distant SQUID rings irradiated with entangled electromagnetic field **(2006)** *Quantum Computing in Solid State Systems* **247**, 253. DOI:10.1007/0-387-31143-2\_30.
30. Migliore, R., Yuasa, K., Nakazato, H., Messina, A. Generation of multipartite entangled states in Josephson architectures **(2006)** *Physical Review B - Condensed Matter and Materials Physics* **74** DOI:10.1103/PhysRevB.74.104503.
31. Migliore, R. Dynamics of a flux qubit coupled with a quantized electromagnetic mode of a lossy cavity **(2006)** *Journal of Superconductivity and Novel Magnetism* **19**, 33-42. DOI:10.1007/s10948-005-0045-7. - 1
32. Migliore, R., Messina, A. Maximally entangled states of two flux qubits in a microwave cavity **(2005)** *Physical Review B - Condensed Matter and Materials Physics* **72** DOI:10.1103/PhysRevB.72.214508.
33. Zukarnain, Z.A., Konstadopoulou, A., Vourdas, A., Migliore, R., Messina, A. Entanglement of distant superconducting quantum interference device rings **(2005)** *Journal of Optics B: Quantum and Semiclassical Optics* **7** DOI:10.1088/1464-4266/7/12/039.
34. Migliore, R., Messina, A. Entangling two uncoupled flux qubits via their sequential interaction with a quantized electromagnetic field **(2005)** *Optics and Spectroscopy* **99** 274 280 DOI:10.1134/1.2034615.
35. Migliore, R., Messina, A. Freezing the dynamics of a rf SQUID qubit via its strong coupling to a quantized microwave field **(2004)** *Journal of Optics B: Quantum and Semiclassical Optics* **6** DOI:10.1088/1464-4266/6/3/021.
36. Migliore, R., Konstadopoulou, A., Vourdas, A., Spiller, T.P., Messina, A. Entangling gates using Josephson circuits coupled through non-classical microwaves **(2003)** *Physics Letters, Section A: General, Atomic and Solid State Physics* **319**, 67-72. DOI:10.1016/j.physleta.2003.10.013.
37. Migliore, R., Messina, A. Electromagnetically induced tunnelling suppression in a flux qubit **(2003)** *European Physical Journal B* **34**, 269-273. DOI:10.1140/epjb/e2003-00221-5.
38. Migliore, R., Messina, A. Rabi oscillations in the dynamics of a fully quantized SQUID ring-electromagnetic field system **(2003)** *Optics and Spectroscopy* **94**, 817-821. DOI:10.1134/1.1576858.
39. Migliore, R., Messina, A. Quantum superpositions of clockwise and counterclockwise supercurrent states in the dynamics of an rf-SQUID exposed to a quantized electromagnetic field **(2003)** *Physical Review B - Condensed Matter and Materials Physics* **67**, 1345051-13450511.
40. Migliore, R., Messina, A. Dynamical behavior of a SQUID ring coupled to a quantized electromagnetic field **(2003)** *International Journal of Modern Physics B* **17**, 709-715.
41. Migliore, R., Messina, A., Napoli, A. Quantum phase expectation values of a mesoscopic Josephson junction from quantum current measurements **(2001)** *European Physical Journal B* **22**, 111-115.
42. Migliore, R., Messina, A., Napoli, A. Quantum current spikes in the I-V characteristic of a mesojunction coupled to non-classical em fields **(2001)** *Journal of Optics B: Quantum and Semiclassical Optics* **3**, 29-34. DOI:10.1088/1464-4266/3/2/302.
43. Migliore, R., Messina, A., Napoli, A. Josephson mesojunctions as detectors of low-intensity quantized coherent far-infrared fields **(2000)** *International Journal of Modern Physics B* **14**, 3104-3109. DOI:10.1142/S0217979200003381.
44. Migliore, R., Messina, A., Napoli, A. Detecting quantum signatures of optical fields by ultras-small Josephson junctions **(2000)** *European Physical Journal B* **13**, 585-588.

## Publications on peer reviewed proceedings of international conferences

1. Vitale, P., Lupascu, C.A., Bologna, L.L., Shah, M., Romani, A., Courcol, J.-D., Antonel, S., van Geit, W.A.H., Shi, Y., LeslieBudd, J.M., Gulyas, A., Kali, S., Migliore, M., Migliore, R., Pezzoli, M., Sáray, S., Tar, L., Schlingloff, D., Berki, P., *Data-driven modeling of mouse CA1 and DG neurons*, BMC Neuroscience **2019**, 20 (Suppl 1):P86
2. Migliore, R., Lupascu, C.A., Franchina, f, Bologna, L.L., Romani, A., Rössert, C., Saray, S., Courcol, J.-D., Geit, W.A.H., Káli, S., Thomson, A., Mercer, A., Lange, S., Falck, J., Muller, E., Schürmann, F., Migliore, M., *Data-driven computational modeling of CA1 hippocampal principal cells and interneurons*, BMC Neuroscience **2017**, 18 (Suppl 1):P177
3. Migliore, M., Lupascu, C.A., Bologna, L.L., Migliore, R., Antonel, S.M., Courcol, J.-D., Schürmann, F., *The Brain Simulation Platform of the Human Brain Project: collaborative web applications and tools for data-driven brain models*, BMC Neuroscience **2017**, 18 (Suppl 1):P235
4. Migliore, R., De Simone, G., Guccione, M., Messina, A. Resetting of a planar superconducting quantum memory (**2009**) ICTON 2009: 11th International Conference on Transparent Optical Networks DOI:10.1109/ICTON.2009.5185297
5. Konstadopoulou, A., Migliore, R., Ahmad Zukarnain, Z., Vourdas, A., Messina, A. *Time evolution of two distant squid rings irradiated with entangled electromagnetic field*, in "Quantum Computation: solid state systems" by P. Delsing, C. Granata, Y. Pashkin, B. Ruggiero and P. Silvestrini, Kluwer Academic Plenum Publishers (**2004**).
6. Migliore, R., Messina, A. *Quantized electromagnetic fields as control tools for flux qubits*, in "Applied Superconductivity 2003" Edited by A. Andreone, G. P. Pepe. R. Cristiano and G. Masullo, Inst. Phys. Conf. Ser. No181, IOP Publishing Ltd (**2004**).
7. Migliore, R., Messina, A. *Mesoscopic Josephson junctions coupled to weak coherent fields: an example of reciprocal detection*, in International workshop on Superconducting Nano-Electronics Devices, pp.175-182, Eds. J. Pekola, B. Ruggiero e P. Silvestrini, Kluwer Academic Plenum, New York (**2002**).
8. Migliore, R., Messina, A. *Entangled states in a SQUID ring-quantized electromagnetic field coupled system*, in Electronic proceedings of "EuroConference on the Physics and Applications of the Intrinsic Josephson Effect", Pommersfelden, 29 June-4 July **2002**.
9. Migliore, R., Konstadopoulou, A., Vourdas, A., Spiller, T.P., Messina, A. *Entangling gates using Josephson circuits*, HP Laboratories Technical Report HPL-2002-356; 23rd December, **2002**.
10. Migliore, R., Messina, A., Napoli, A. *Detection of Low-Intensity Far-Infrared Coherent Fields by Mesoscopic Josephson Junctions* in "Nuclear and Condensed Matter Physics", edited by Antonino Messina, AIP Conference Proceedings (American Institute of Physics, Woodbury, New York, **2000**) vol 513, pag. 170.
11. Migliore, R., Messina, A., Napoli, A. *Quantum interference effects on the supercurrent in mesoscopic Josephson junctions*, in "Mysteries, Puzzles, and Paradoxes in Quantum Mechanics", edited by Rodolfo Bonifacio, AIP Conference Proceedings (American Institute of Physics, Woodbury, New York, **1999**), pag. 343.

## bioRxiv preprints

1. Joseph K., Ravi V.M., Argiti K., Feuerstein T.J., Zentner J., Migliore R., Migliore M., Hofmann U.G. *When a rose is not a rose: Pyramidal neurons respond differently in healthy and epileptic human neocortex.* (**2017**) bioRxiv 185710; doi: <https://doi.org/10.1101/185710>