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### LIST OF PUBLICATIONS

1. G. M. D'Ariano, M. Erba, P. Perinotti, and A. Tosini, "Virtually Abelian Quantum Walks", *J. Phys. A: Math. Theor.* 50, 035301 (2017).
2. G. M. D'Ariano and P. Perinotti, "Quantum cellular automata and free quantum field theory", *Front. Phys.* 12(1), 120301 (2017).
3. A. Bisio, G. M. D'Ariano, and P. Perinotti, "Special Relativity in a Discrete Quantum Universe", *Phys. Rev. A* 94, 042120 (2016).
4. A. Bisio, G. M. D'Ariano, M. Erba, P. Perinotti, A. Tosini, "Quantum walks without quantum coin", *Phys. Rev. A* 93, 062334 (2016).
5. G. M. D'Ariano, N. Mosco, P. Perinotti, A. Tosini, "Discrete time Dirac quantum walk in 3+1 dimensions", *Entropy* 18, 228 (2016).
6. A. Bisio, M. Dall'Arno, P. Perinotti, "Quantum conditional operations", *Phys. Rev. A* 94, 022340 (2016).
7. A. Bisio, G. M. D'Ariano, P. Perinotti, "Quantum cellular automaton theory of light", *Ann. Phys.* 368, pp. 177-190 (2016).
8. G. M. D'Ariano and P. Perinotti, "Quantum Theory is an Information Theory. The Operational Framework and the Axioms", *Found. Phys.* 46, 269 (2016).
9. A. Bisio, G. M. D'Ariano, P. Perinotti, "Quantum walks, deformed relativity, and Hopf algebra symmetries", *Phil. Trans. R. Soc. A* 374, 20150232 (2016).
10. A. Bisio, G. M. D'Ariano, P. Perinotti, A. Tosini, "Free quantum field theory from quantum cellular automata: derivation of Weyl, Dirac and Maxwell quantum cellular automata", *Found. Phys.* 45, pp. 1137-1152 (2015).
11. A. Bisio, G. M. D'Ariano, P. Perinotti, A. Tosini, "Weyl, Dirac and Maxwell Quantum Cellular Automata: analytical solutions and phenomenological predictions of the Quantum Cellular Automata Theory of Free Fields", *Found. Phys.* 45, pp. 1203-1221 (2015).
12. G. M. D'Ariano, N. Mosco, P. Perinotti, A. Tosini, "Discrete Feynman propagator for the Weyl quantum walk in 2+1 dimensions", *EPL* 109, 40012 (2015).
13. A. Bibeau-Delisle, A. Bisio, G. M. D'Ariano, P. Perinotti, A. Tosini, "Doubly-Special Relativity from Quantum Cellular Automata", *EPL* 109, 50003 (2015).
14. G. M. D'Ariano and P. Perinotti, "Derivation of Dirac equation from principles of information processing", *Phys. Rev. A* 90, 062106 (2014).

15. G. M. D'Ariano, N. Mosco, P. Perinotti, A. Tosini, "Path-integral solution of the one-dimensional Dirac quantum cellular automaton", *Phys. Lett. A* 378, pp. 3165-3168 (2014).
16. G. M. D'Ariano, F. Manessi, P. Perinotti, A. Tosini, "The Feynman problem and Fermionic entanglement: Fermionic theory versus qubit theory", *Int. J. Mod. Phys. A* 29, 1430025 (2014).
17. G. M. D'Ariano, F. Manessi, P. Perinotti, A. Tosini, "Fermionic computation is non-local tomographic and violates monogamy of entanglement", *EPL* 107, 20009 (2014).
18. A. Bisio, G. M. D'Ariano, P. Perinotti, M. Sedlák, "Optimal processing of reversible quantum channels", *Phys. Lett. A* 378, p. 1797 (2014).
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26. A. Bisio, G. M. D'Ariano, P. Perinotti, and M. Sedlák, "Memory cost of quantum protocols", *Phys. Rev. A* 85, 032333 (2012).
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#### **PROCEEDINGS**

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2. G. Chiribella, G. M. D'Ariano, and P. Perinotti, "Informational axioms for quantum theory", in "Foundations of Probability and Physics - 6", *AIP Conf. Proc.* 1424, 270 (2012).

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5. G. M. D'Ariano and P. Perinotti, "On the most efficient unitary transformation for programming quantum channels", in "Quantum Probability and Infinite Dimensional Analysis: Proceedings of the 26th Conference", Ed. by L. Accardi, W. Freudenberg, and M. Schurmann, (World Scientific, Singapore, 2007), pag. 173.
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