

# Lista di alcune pubblicazioni del Prof. Orazio Muscato

1. **O. Muscato**, *The Onsager Reciprocity Principle as a check of consistency for semiconductor carrier transport models*, Physica A, **289**, Issues 3-4, pp. 422-458, (2001)
2. J.A. Carrillo, I.M. Gamba, **O. Muscato** and C.W. Shu, *Comparison of Monte Carlo and deterministic simulations of a silicon diode*, The IMA volumes in Mathematics and its applications, eds. N. Ben Abdallah et al., Vol. 135, pp. 75-84, Springer (2003) ISBN 0-387-40495-3
3. **O. Muscato**, *Sobolev norm and carrier transport in semiconductor devices*, The IMA volumes in Mathematics and its applications, eds. N. Ben Abdallah et al., Vol. 135, pp. 231-240, Springer (2003) ISBN 0-387-40495-3
4. **O. Muscato**, *Relaxation-time approximations to the Boltzmann equation for electron transport in bulk silicon*, Physica A, **317**, pp. 113-128, (2003)
5. A. Majorana, **O. Muscato**, and C. Milazzo, *Charge transport in 1D silicon devices via Monte Carlo simulation and Boltzmann Poisson solver*, COMPEL, **23**(2), pp. 410-425, (2004)
6. **O. Muscato**, *Hydrodynamic transport models for an ultra-thin base Si Bipolar Transistor*, J. Appl. Physics, **96**(2), pp. 1219-1229, (2004)
7. **O. Muscato** and W. Wagner, *Time step truncation in Direct Simulation Monte Carlo for semiconductors*, COMPEL, **24**(4), pp.1351-1366, (2005)
8. **O. Muscato**, *Validation of an Extended Hydrodynamic model for a sub-micron npn Bipolar Junction Transistor*, Physica A, **365**(2) pp. 409-428, (2006)
9. **O. Muscato**, *Hot electron distribution function for the Boltzmann equation with analytic bands*, J. Comput. Electron., **5**, pp. 377-380, (2006)
10. **O. Muscato**, V. Di Stefano and C. Milazzo, *An improved hydrodynamic model describing heat generation and transport in submicron silicon devices*, J. Comput. Electron., **7**, pp. 142-145, (2008)

11. **O. Muscato** and V. Di Stefano, *Modeling heat generation in a sub-micrometric  $n^+ - n - n^+$  silicon diode*, J. Appl. Phys., **104**(12), 124501, (2008)
12. **O. Muscato**, *Direct Simulation Monte Carlo for semiconductors*, Oberwolfach Reports, European Mathematical Society Publishing House Volume 5, Issue 4, pp. 2955 - 2958, (2008)
13. **O. Muscato**, W. Wagner and V. Di Stefano, *Numerical study of the systematic error in Monte Carlo schemes for semiconductors*, ESAIM: M2AN **44**,1049-1068, (2010), DOI 10.1051/m2an/2010051
14. **O. Muscato** and V. Di Stefano, *Thermal and electrical modeling of sub-micron silicon devices*, Comm. Applied Industr. Mathematics, vol. 1(2), p. 29-45, (2010) doi: 10.1685/2010CAIM529
15. B. Apolloni, S. Bassis, A. Ciccazzo, A. Marotta, S. Rinaudo, **O. Muscato**, *Advanced Statistical Methodologies for Tolerance Analysis in Analog Circuit Design*, IEEE eLearning Library (2010)
16. B. Apolloni, S. Bassis, A. Ciccazzo, A. Marotta, S. Rinaudo and **O. Muscato** *Advanced Statistical Methodologies for Tolerance Analysis in the Integrated Circuit Design*, in *Advances in Analog Circuits*, pp. 227-244, edited by E. Tlelo-Cuautle, InTech (2011), ISBN 978-953-307-323-1
17. **O. Muscato** and V. Di Stefano, *Heat generation and transport in nanoscale semiconductor devices via Monte Carlo and hydrodynamic simulations*, COMPEL, **30**(2), pp. 519-537, (2011) DOI 10.1108/03321641111101050
18. **O. Muscato** and V. Di Stefano, *Hydrodynamic modeling of the electro-thermal transport in silicon semiconductors*, J. Phys. A: Math. Theor. **44**, 105501, (2011) DOI 10.1088/1751-8113/44/10/105501
19. **O. Muscato** and V. Di Stefano, *An Energy Transport Model describing heat generation and conduction in silicon semiconductors*, J. Stat. Phys. **144**, pp. 171-197, (2011), DOI 10.1007/s10955-011-0247-2
20. **O. Muscato**, W. Wagner and V. Di Stefano, *Properties of the steady state distribution of electrons in semiconductors*, Kinetic and Related Models, **4**, pp. 809-829, (2011), doi: 10.3934/krm.2011.4.809
21. **O. Muscato** and V. Di Stefano, *Local equilibrium and off-equilibrium thermoelectric effects in silicon semiconductors*, J. Appl. Phys. **110**, 093706, (2011), DOI 10.1063/1.3658016
22. **O. Muscato** and V. Di Stefano, *Hydrodynamic modeling of silicon quantum wires*, J. Comp. Electr. **11**, 45-55, (2012), DOI 10.1007/s10825-012-0381-3

23. **O. Muscato**, V. Di Stefano and G. Moschetti, *Thermoelectric effects in silicon quantum wires*, Comm. Applied Industr. Mathematics, vol. 3(1), (2012), doi: 10.1685/journal.caim.414, ISSN 2038-0909 e414
24. **O. Muscato** and V. Di Stefano, *Electro-thermal behaviour of a sub-micron silicon diode*, Semicond. Sci. Technol. **28**, 025021, (2013), doi:10.1088/0268-1242/28/2/025021
25. **O. Muscato**, V. Di Stefano and W. Wagner, *A variance-reduced electrothermal Monte Carlo method for semiconductor device simulation*, Comp. Math. with Applications, **65**, 520-527, (2013), doi:10.1016/j.camwa.2012.03.100
26. **O. Muscato** and V. Di Stefano, *Hydrodynamic simulation of a  $n^+ - n - n^+$  silicon nanowire*, Contin. Mech. Thermodyn. **26**, 197-205, (2014), doi:10.1007/s00161-013-0296-7
27. **O. Muscato**, W. Wagner and V. Di Stefano, *Heat generation in silicon nanometric semiconductor devices*, COMPEL, **33**(4), 1198-1207, (2014)
28. **O. Muscato** and V. Di Stefano, *Electrothermal transport in silicon carbide semiconductors via a hydrodynamic model*, SIAM J. APPL. MATH., **75**(4), 1941 - 1964, (2015), doi: 10.1137/140995623
29. **O. Muscato** and W. Wagner, *A class of stochastic algorithms for the Wigner equation*, SIAM J. Sci. Comp., **38**(3), A1483-A1507, (2016)
30. **O. Muscato** and T. Castiglione, *Electron transport in silicon nanowires having different cross-sections*, Comm. Appl. Ind. Math., **7**(2), 8-25, (2016), doi: 10.1515/caim-2016-0003
31. **O. Muscato** and T. Castiglione, *A Hydrodynamic Model for Silicon Nanowires Based on the Maximum Entropy Principle*, Entropy, **18**, 368, (2016), doi: 10.3390/e18100368
32. T. Castiglione and **O. Muscato**, *Non-Parabolic Band Hydrodynamic Model for Silicon Quantum Wires*, J. Comput. Theor. Transp., **46**(3), 186-201, (2017), <http://dx.doi.org/10.1080/23324309.2017.1318402>
33. **O. Muscato** and V. Di Stefano, *A hierarchy of hydrodynamic models for silicon carbide semiconductors*, Comm. Applied Industr. Mathematics, vol. 8(1), 251-264, (2017), DOI: 10.1515/caim-2017-0013
34. **O. Muscato**, *A benchmark study of the Signed-particle Monte Carlo algorithm for the Wigner equation*, Comm. Applied Industr. Mathematics, vol. 8(1), 237-250, (2017), DOI: 10.1515/caim-2017-0012
35. **O. Muscato** and W. Wagner, *A stochastic algorithm without time discretization error for the Wigner equation*, Kin. Rel. Models, **12**(1), 59-77, (2019) , doi: 10.3934/krm.2019003

**Per un elenco completo consultare**

- Google Scholar (<https://scholar.google.it/citations?user=UVyUdfgAAAAJ&hl=it>)
- Scopus (<https://www.scopus.com/authid/detail.uri?authorId=6603625967>)