Joseph C. Schindler

Postdoctoral Scholar, Physics
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Citizenship: USA. Born: USA, 1990.

Education and Training

2019–2020 PostDoc, Theoretical Physics, Santa Cruz Institute for Particle Physics
Primary Research Areas: quantum information, quantum statistical mechanics, general relativity, black hole evaporation, differential geometry, geometric calculus

2019 PhD, Physics, University of California Santa Cruz
Advisor: Anthony Aguirre
Thesis: The structure of evaporating black holes
Primary Research Areas: general relativity, quantum information

2013 MA, Experimental Physics, Wesleyan University
Advisor: Fred Ellis
Thesis: PT-Symmetric Electronics
Primary Research Areas: electronic realization of non-Hermitian dynamics, novel wave phenomena, PT-symmetric open systems

2012 BA, Physics, Wesleyan University

Employment

2019–2020 PostDoc, Theoretical Physics, Santa Cruz Institute for Particle Physics
2018–2018 Graduate Student Instructor, University of California Santa Cruz
2013–2019 Graduate Teaching and Research Assistant, University of California Santa Cruz
2012–2013 Graduate Research Assistant, Wesleyan University
2008–2012 Teaching and Research Assistant, Wesleyan University

Awards and Honors

2017 Marilyn Stevens Memorial Award, UC Santa Cruz
2012 Research Highlighted by APS *Physics* (physics.aps.org, "Synopsis: Circuit Analysis")
2012 Phi Beta Kappa, Wesleyan University
2012 Karl Van Dyke Prize in Physics, Wesleyan University
2011 Karl Van Dyke Prize in Physics, Wesleyan University

Publications

Journal Articles

- J. Schindler, E. Frangipane, and A. Aguirre, "Unitarity and the information problem in an explicit model of black hole evaporation", Class. Quantum Grav. **38**, 075025 (2021), arXiv:2012.07973 [gr-qc].
- D. Šafránek, A. Aguirre, J. Schindler, and J. M. Deutsch, "A brief introduction to observational entropy", In Review (2020), arXiv:2008.04409 [quant-ph].

- J. Schindler, "Basics of observational entropy", (2020), arXiv:2010.00142 [quant-ph].
- J. C. Schindler, A. Aguirre, and A. Kuttner, "Understanding black hole evaporation using explicitly computed Penrose diagrams", Phys. Rev. D **101**, 024010 (2020), arXiv:1907.04879 [gr-qc].
- J. Schindler, D. Šafránek, and A. Aguirre, "Quantum correlation entropy", Phys. Rev. A **102**, 052407 (2020), arXiv:2005.05408 [quant-ph].
- J. C. Schindler, "Geometric calculus on pseudo-Riemannian manifolds", (2019), arXiv:1911.07145 [math.DG].
- J. C. Schindler and A. Aguirre, "Algorithms for the explicit computation of Penrose diagrams", Class. Quantum Grav. **35**, 105019 (2018), arXiv:1802.02263 [gr-qc].
- M. Chitsazi, S. Factor, J. Schindler, H. Ramezani, F. M. Ellis, and T. Kottos, "Experimental observation of lasing shutdown via asymmetric gain", Phys. Rev. A **89**, 043842 (2014).
- Z. Lin, J. Schindler, F. M. Ellis, and T. Kottos, "Experimental observation of the dual behavior of PT-symmetric scattering", Phys. Rev. A **85**, 050101 (2012), arXiv:1205.2176 [cond-mat.mes-hall].
- H. Ramezani, J. Schindler, F. M. Ellis, U. Günther, and T. Kottos, "Bypassing the bandwidth theorem with PT symmetry", Phys. Rev. A **85**, 062122 (2012), arXiv:1205.1847 [physics.class-ph].
- J. Schindler, Z. Lin, J. M. Lee, H. Ramezani, F. M. Ellis, and T. Kottos, "PT-symmetric electronics", J. Phys. A **45**, 444029 (2012), arXiv:1209.2347 [cond-mat.other].
- J. Schindler, A. Li, M. C. Zheng, F. M. Ellis, and T. Kottos, "Experimental study of active LRC circuits with PT symmetries", Phys. Rev. A **84**, 040101 (2011), arXiv:1109.2913 [cond-mat.other].

Theses

- J. Schindler, *The Structure of Evaporating Black Holes*, PhD Thesis, University of California Santa Cruz, 2019.
- J. Schindler, *PT-Symmetric Electronics*, Master Thesis, Wesleyan University, 2013.

Talks

- J. Schindler, "The multivector approach to differential geometry: a simpler foundation for general relativity", SCIPP Theory Seminar, Santa Cruz Institute for Particle Physics, 2019.
- J. Schindler, "The structure of evaporating black holes", Dissertation Defense, University of California Santa Cruz, 2019.
- J. Schindler, "Causal structure of black hole formation and evaporation", University of California Santa Cruz, 2016.
- J. Schindler, "Deriving special relativity from causal sets", Theoretical Physics Seminar, Wesleyan University, 2012.
- J. Schindler, "Pt symmetric electronics", Thesis Defense, Wesleyan University, 2012.
- J. Schindler, H. Ramezani, A. Li, M. Zheng, T. Kottos, and F. Ellis, "Experimental observation of brachistochrone wave dynamics in pt symmetric structures", APS March Meeting Abstracts, 2012.

Citation Metrics

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