

Mme Karyn LE HUR: Publications

*142 Articles including 12 Reviews (introduced here with * in publications list), 2 books' chapters*
<https://scholar.google.com/citations?user=9LsrbzAAAAAJhl=en>

Participation in Books

Participation in a Popular Book on Quantum Mechanics, *Le Plus Grand des Hasards*, Editors Jean-Francois Dars and Anne-Marie Papillaut, 2010, 65 authors

Book on *Understanding Quantum Phase Transitions*, editor L. D. Carr
 Taylor and Francis, Boca Raton, 2010

Chapter on *Quantum Phase Transitions in Spin-Boson Systems: Dissipation and Light phenomena*,
 by Karyn Le Hur (26 pages, also accessible at arXiv:09094822)

Reviews

1. *Topological Matter and Fractional Entangled Geometry*,
 Karyn Le Hur, arXiv:2209.15381, 109 pages, submitted to Physics Reports, October 2023.
 Review March 2024 received suggesting to shorten the Review. Re-submission March 26th 2024.
 The Review follows four courses that I gave at Paris-Saclay Lectures Series 2023 on Geometry in
 the Quantum. Slides are accessible on my web page.
2. *Phase-Coherent Dynamics of Quantum Devices With Local Interactions*,
 Michele Filippone, Arthur Marguerite, Karyn Le Hur, Gwendal Fève, Christophe Mora,
 Entropy 2020, **22**(8), 847
3. *Driven dissipative dynamics and topology of quantum impurity systems*,
 Karyn Le Hur, Loïc Henriët, Loïc Herviou, Kirill Plekhanov, Alexandru Petrescu, Tal Goren, Marco
 Schiro, Christophe Mora, Peter P. Orth, arXiv:1702.05135
 Comptes Rendus Académie des Sciences, Special Issue on Quantum Simulators, **19**, 451-483 (2018).
4. *Many-Body Quantum Electrodynamics Networks: Non-Equilibrium Condensed Matter Physics
 with Light*, Karyn Le Hur, Loïc Henriët, Alexandru Petrescu, Kirill Plekhanov, Guillaume Roux,
 Marco Schiró, arXiv:1505.00167, C. R. Physique **17** (2016) 808-835.
5. *Fluctuations and Entanglement spectrum in quantum Hall states*,
 Alexandru Petrescu, H. Francis Song, Stephan Rachel, Zoran Ristivojevic, Christian Flindt, Nicolas
 Laflorencie, Israel Klich, Nicolas Regnault, Karyn Le Hur J. Stat. Mech. (2014) P10005.
6. *Correlated Topological Phases and Exotic Magnetism with Ultracold Fermions*
 Peter P. Orth, Daniel Cocks, Stephan Rachel, Michael Buchhold, Karyn Le Hur, Walter Hofstetter,
 arXiv:1212.5607
 Contribution to J. Phys. B special issue on non-Abelian gauge fields, J. Phys. B: At. Mol. Opt.
 Phys. **46** (2013) 134004. and D. Cocks *et al.* Phys. Rev. Lett. **109**, 205303 (2012).
7. *Non-perturbative stochastic method for driven spin-boson model*
 Peter P. Orth, Adilet Imambekov, Karyn Le Hur Phys. Rev. B **87**, 014305 (2013).
 See also Loïc Henriët, Zoran Ristivojevic, Peter P. Orth, Karyn Le Hur, Phys. Rev. A **90**, 023820
 (2014).

8. *Bipartite Fluctuations as a Probe of Many-Body Entanglement*

H. Francis Song, Stephan Rachel, Christian Flindt, Israel Klich, Nicolas Laflorencie, Karyn Le Hur, arXiv:1109.1001, 30 pages+25 pages Supplementary Material
Phys. Rev. B **85**, 035409 (2012), Editors' Suggestion.

9. Survey on *Effective Equilibrium Theory in NonEquilibrium Quantum Transport*, by Prasenjit Dutt, Jens Koch, J. Han and Karyn Le Hur, arXiv:1101.1526, 53 pages
Annals of Physics **326**, (2011) 2963-2999

10. *Superconductivity close to the Mott state: From condensed-matter systems to Superfluidity in optical lattices*, K. Le Hur and T. Maurice Rice, review article,
Annals of Physics **324**, 1452-1515 (2009), Special Issue July, arXiv:0812.1581, 98 pages

11. *Entanglement Entropy, decoherence, quantum phase transition of a dissipative two-level system*, Karyn Le Hur, Annals of Physics **323**, 2208-2240 (2008) (34 pages).

12. *Review Article on heavy fermions initiated by B. Coqblin:*

B. Coqblin, J. Arispe, J. R. Iglesias, C. Lacroix, and Karyn Le Hur, J. Phys. Soc. Jpn. **65**, 64 (1996).

[List of Publications](#)

Publications 2024

142 *Topological p-wave Superconductors with Disorder and Interactions*

Frederick del Pozo, L oic Herviou, Olesia Dmytruk, Karyn Le Hur, to appear on ArXiv

141 *Spectroscopy and topological properties of a Haldane light system*

Julian Legendre and Karyn Le Hur, Phys. Rev. A **109** L 021701 (2024)

140 * *Topological Matter and Fractional Entangled Geometry*,

Karyn Le Hur, arXiv:2209.15381, submitted to Physics Reports October 2023, 109 pages.
Re-submitted March 2024.

139 *Quantum Hall and Light Response in a 2D topological semimetal*

Karyn Le Hur and Sariah Al Saati, arXiv:2311.13922. To be submitted.

138 *Topological signatures of a p-wave superconducting wire through Light*

Frederick del Pozo and Karyn Le Hur, arXiv:2401.14501, submitted to Phys. Rev. Lett.

137 *Majorana fermions and quantum information with fractional topology and disorder*

Ephraim Bernhardt, Brian Chung Hang Cheung, Karyn Le Hur, arXiv:2309.03127, accepted Physical Review Research.

Publications 2023

136 *One-Half Topological Numbers in Entangled Quantum Physics*

Karyn Le Hur, Phys. Rev. B **108**, 235144 (2023).

135 *Protected Topological Nodal Ring Semimetal in Graphene*

Karyn Le Hur and Sariah Al Saati, Phys. Rev. B **107**, 165407 (2023).

134 *Fractional Topology in interacting 1D Superconductors*,

Frederick del Pozo, L oic Herviou, Karyn Le Hur, arXiv:2210.05024, 32 pages, Phys. Rev. B **107**, 155134 (2023).

133 *A topologically protected quantum dynamo effect in a driven spin-boson model*,

Ephraim Bernhardt, Cyril Elouard, Karyn Le Hur, arXiv:2208.01707, 27 pages, published in Phys.

Rev. A **107**, 022219 (2023).

Publications 2022

132 *Hubbard model on the Kagome lattice with time-reversal invariant flux and spin-orbit coupling*, Irakli Titvindze, Julian Legendre, Karyn Le Hur, Walter Hofstetter, Phys. Rev. B **105**, 235102 (2022).

131 *Global and Local Topological Quantized Responses from Geometry, Light and Time*, Karyn Le Hur, Phys. Rev. B **105**, 125106 (2022).

130 *Doping a topological insulator: a promising strategy to find topological superconductors?* Sebastian Wolf, Tyler Gardener, Karyn Le Hur, Stephan Rachel, Phys. Rev. B **105**, L100505 (2022).

Publications 2021

129 *Kondo induced π -phase shift of microwave photons in a circuit quantum electrodynamics architecture*, Guang-Wei Deng, Loic Henriot, Da Wei, Shu-Xiao Li, Hai-Ou Li, Gang Cao, Ming Xiao, Guang-Can Guo, Marco Schiro, Karyn Le Hur, Guo-Ping Guo, Phys. Rev. B **104**, 125407 (2021)

128 *Interacting Stochastic Topology and Mott Transition from Light Response*, Philipp W. Klein, Adolfo G. Grushin, Karyn Le Hur, Phys. Rev. B **103**, 035114 (2021)

127 *Quantum Entangled Fractional Topology and Curvatures*, Joel Hutchinson, Karyn Le Hur, Communication Physics **4**, 144 (2021).

126 *Quantum system dynamics with a weakly nonlinear Josephson junction bath*, Jing Yang, Étienne Jussiau, Cyril Elouard, Karyn Le Hur, Andrew N. Jordan Phys. Rev. B **103**, 085402 (2021)

125 *Localization Dynamics from Static and Mobile Impurities*, Ephraim Bernhardt, Fan Yang, Karyn Le Hur, Phys. Rev. B **104**, 115113 (2021)

124 *Spin-orbit coupling in the kagome lattice with flux and time-reversal symmetry*, Irakli Titvindze, Julian Legendre, Maarten Grothuis, Bernhard Irsigler, Karyn Le Hur, Walter Hofstetter, Phys. Rev. B **103**, 195105 (2021)

123 *Analytical approach for the Mott transition in the Kane-Mele-Hubbard model*, Joel Hutchinson, Philipp W. Klein, Karyn Le Hur, Phys. Rev. B **104**, 075120 (2021)

Publications 2020

122* *Phase-Coherent Dynamics of Quantum Devices With Local Interactions*, Michele Filippone, Arthur Marguerite, Karyn Le Hur, Gwendal Fève, Christophe Mora Entropy 2020, **22**(8), 847

121 *Valence bond fluctuations in the Kitaev spin model*, Fan Yang, Kirill Plekhanov, Karyn Le Hur, Phys. Rev. Research **2**, 013005 (2020)

120 *Magnetic Topological Kagome Systems*, Julian Legendre and Karyn Le Hur, Phys. Rev. Research **2**, 022043 (2020)

119 *From Topological Superconductivity to Quantum Hall States in Coupled Wires*, Fan Yang, Vivien Perrin, Alexandru Petrescu, Ion Garate, Karyn Le Hur, Phys. Rev. B **101**, 085116 (2020)

118 *Fluctuating Forces Induced by Non Equilibrium and Coherent Light Flow*, Ariane Soret, Karyn Le Hur, Eric Akkermans, Phys. Rev. Lett. **124**, 136803 (2020)

Publications 2019

117 *Topological proximity effects in a Haldane-graphene bilayer system*, Peng Cheng, Philipp W. Klein, Kirill Plekhanov, Klaus Sengstock, Monika Aidelsburger, Christof

- Weitenberg, Karyn Le Hur, Phys. Rev. B(R) **100**, 081107 (2019)
- 116** *Mechanical resonances of mobile impurities in a one-dimensional quantum fluid*, Thomas L. Schmidt, Giacomo Dolcetto, Christopher J. Pedder, Karyn Le Hur, Peter P. Orth, Phys. Rev. Lett. **123**, 075302 (2019).
- 115** *Real-Time Ramsey Interferometry in Fractional Quantum Hall States*, Tal Goren and Karyn Le Hur, Phys. Rev. B(R) **99**, 161109 (2019) (2019).
- 114** *Quench-induced dynamical phase transitions and π -synchronization in the Bose-Hubbard Model*, Andrea Pizzi, Fabrizio Dolcini, Karyn Le Hur, arXiv:1810.12414
Phys. Rev. B **99**, 094301 (2019), 22 pages.
- 113** *Bipartite Fluctuations and Topology of Dirac and Weyl Systems*, Loïc Herviou, Karyn Le Hur, Christophe Mora, Phys. Rev. B **99**, 075133 (2019).

Publications 2018

- 112** *Engineering Quantum Spin Liquids and Many-Body Majorana States with a Driven Superconducting Box Circuit*, Fan Yang, Loïc Henriët, Ariane Soret, Karyn Le Hur, Phys. Rev. B **98**, 035431 (2018).
- 111** *Emergent Chiral Spin State in the Mott Phase of a Bosonic Kane-Mele-Hubbard Model*, Kirill Plekhanov, Ivana Vasic, Alexandru Petrescu, Rajbir Nirwan, Guillaume Roux, Walter Hofstetter, Karyn Le Hur, Phys. Rev. Lett. **120**, 157201 (2018).
- 110*** *Driven dissipative dynamics and topology of quantum impurity systems* Karyn Le Hur, Loïc Henriët, Loïc Herviou, Kirill Plekhanov, Alexandru Petrescu, Tal Goren, Marco Schiro, Christophe Mora, Peter P. Orth, 39 pages, arXiv:1702.05135,
Comptes Rendus Académie des Sciences, Special Issue on Quantum Simulators, **19**, 451-483 (2018).
- 109** *Topological Zak Phase in Strongly-Coupled LC Circuits*
Tal Goren, Kirill Plekhanov, Félicien Appas, Karyn Le Hur, Phys. Rev. B **97**, 041106 (2018).
- 108** *Ramsey Interferometry of Particle-Hole Pairs in Tunnel Junctions*
Tal Goren, Karyn Le Hur, Eric Akkermans, arXiv:1611.06738.

Publications 2017

- 107** *Majorana Spin Liquids, Topology and Superconductivity in Ladders*
Karyn Le Hur, Ariane Soret, Fan Yang, Phys. Rev. B **96**, 205109 (2017).
- 106** *Bipartite charge fluctuations in one-dimensional \mathbb{Z}_2 superconductors and insulators*
Loïc Herviou, Christophe Mora, Karyn Le Hur, Phys. Rev. B **96**, 121113 (2017).
- 105** *Precursor of Laughlin state of hard core bosons on a two leg ladder* Alexandru Petrescu, Marie Piraud, Guillaume Roux, I. P. McCulloch, Karyn Le Hur, Phys. Rev. B **96**, 014524 (2017).
- 104** *Topology of a dissipative spin: dynamical Chern number, bath induced non-adiabaticity and a quantum dynamo effect* Loïc Henriët, Antonio Sclocchi, Peter P. Orth, Karyn Le Hur, Phys. Rev. B **95**, 054307 (2017).
- 103** *Floquet Engineering of Haldane Chern Insulators and Chiral bosonic phase transitions*, Kirill Plekhanov, Guillaume Roux, Karyn Le Hur Phys. Rev. B **95**, 045102 (2017).

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- 102** *Many-terminal Majorana island: from Topological to Multi-Channel Kondo Model*
Loïc Herviou, Karyn Le Hur, Christophe Mora Phys. Rev. B **94**, 235102 (2016).
- 101** *Triplet FFLO Superconductivity in the doped Kitaev-Heisenberg Honeycomb Model*, Tianhan Liu, Cécile Repellin, Benoît Douçot, Nicolas Regnault, Karyn Le Hur, Phys. Rev. B **94**, 180506 (2016).
- 100*** *Many-Body Quantum Electrodynamics Networks: Non-Equilibrium Condensed Matter Physics*

with Light, Karyn Le Hur, Loïc Henriët, Alexandru Petrescu, Kirill Plekhanov, Guillaume Roux, Marco Schiró, arXiv:1505.00167, C. R. Physique **17** (2016) 808-835.

99 Realizing Topological Mott Insulators from the RKKY Interaction, Tianhan Liu, Benoît Douçot, Karyn Le Hur Phys. Rev. B **93**, 195153 (2016).

98 Phase Diagram and Entanglement of two interacting topological Kitaev chains
Loïc Herviou, Christophe Mora, Karyn Le Hur, Phys. Rev. B **93**, 165142 (2016), 24 pages.

97 Entanglement structure of the two-channel Kondo model
Bedoor Alkurtass, Abolfazl Bayat, Ian Affleck, Sougato Bose, Henrik Johannesson, Pasquale Sodano, Erik S. Sorensen, Karyn Le Hur, Phys. Rev. B **93**, 081106 (2016).

96 Quantum sweeps, synchronization, and Kibble-Zurek physics in dissipative quantum spin systems, Loïc Henriët, Karyn Le Hur, Phys. Rev. B **93**, 064411 (2016) (24 pages).

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95 Condensed-matter physics: Quantum dots and the Kondo effect, Karyn Le Hur, Nature **526**, 203204 (2015). News and Views on articles by experiments at Marcoussis (Z. Iftikhar et al. Nature 526, 233-236 (2015)) and Stanford (A. J. Keller et al. Nature 526, 237-240 (2015)).

94 Electrical Current from Quantum Vacuum Fluctuations in Nano-engines
Loïc Henriët, Andrew N. Jordan, Karyn Le Hur, Phys. Rev. B **92**, 125306 (2015).

93 Topological Superconductivity in Two Dimensions with Mixed Chirality
A. M. Black-Schaffer, K. Le Hur, Phys. Rev. B **92**, 140503(R) (2015).

92 Chiral Mott Insulators, Meissner Effect, and Laughlin States in Quantum Ladders
Alexandru Petrescu, Karyn Le Hur, Phys. Rev. B **91**, 054520 (2015).

91 *Chiral Bosonic Phases on the Haldane Honeycomb Lattice*, Ivana Vasic, Alexandru Petrescu, Karyn Le Hur, Walter Hofstetter, Phys. Rev. B **91**, 094502
Published 3 March 2015 - Editors Suggestion

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90 *Chiral d-wave superconductivity on the honeycomb lattice close to the Mott state*, Annica M. Black-Schaffer, Wei Wu, Karyn Le Hur, Phys. Rev. B **90**, 054521 (2014).

89* *Fluctuations and Entanglement spectrum in quantum Hall states*, Alexandru Petrescu, H. Francis Song, Stephan Rachel, Zoran Ristivojevic, Christian Flindt, Nicolas Laflorencie, Israel Klich, Nicolas Regnault, Karyn Le Hur, J. Stat. Mech. (2014) P10005.

88 *Quantum Dynamics of the Driven and Dissipative Rabi Model*, Loïc Henriët, Zoran Ristivojevic, Peter P. Orth, Karyn Le Hur, Phys. Rev. A **90**, 023820 (2014).

87 *Tunable Hybrid Quantum Electrodynamics from Non-Linear Electron Transport*, Marco Schiró, Karyn Le Hur, Phys. Rev. B **89**, 195127 (2014).

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86 *Anisotropic Quantum Spin Hall Effect, Spin-Orbital Textures and Mott Transition*, Tianhan Liu, Benoît Douçot, Karyn Le Hur Phys. Rev. B **88**, 245119 (2013), 24 pages

85 *Strongly-Correlated Thermoelectric Transport beyond Linear Response*, Prasenjit Dutt and Karyn Le Hur Phys. Rev. B **88**, 235133 (2013).

84 *Bosonic Mott Insulator with Meissner Currents*, Alexandru Petrescu, Karyn Le Hur Phys. Rev. Lett. **111**, 150601 (2013).

83 *Admittance of the $SU(2)$ and $SU(4)$ Anderson quantum RC circuits*, Michele Filippone, Karyn Le Hur, Christophe Mora, Phys. Rev. B **88**, 045302 (2013).

82 *Strongly correlated dynamics in multichannel quantum RC circuits*,

- Prasenjit Dutt, Thomas Schmidt, Christophe Mora, Karyn Le Hur Phys. Rev. B **87**, 155134 (2013).
81 *Correlated Dirac particles and Superconductivity on the Honeycomb Lattice*,
 Wei Wu, Michael M. Scherer, Carsten Honerkamp, Karyn Le Hur, Phys. Rev. B **87**, 094521 (2013)
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80* *Correlated Topological Phases and Exotic Magnetism with Ultracold Fermions*
 Peter P. Orth, Daniel Cocks, Stephan Rachel, Michael Buchhold, Karyn Le Hur, Walter Hofstetter,
 J. Phys. B: At. Mol. Opt. Phys. **46** (2013) 134004 (topical review)
79 *Low Frequency Admittance as a Probe of Majorana Fermions*
 Christophe Mora, Karyn Le Hur Phys. Rev. B **88**, 241302 (2013).
78 *Non-equilibrium Quantum Transport through a dissipative resonant level model*
 Chung-Hou Chung, Karyn Le Hur, Gleb Finkelstein, Matthias Vojta, Peter Woelfle, Phys. Rev. B
87, 245310 (2013).
77* *Non-perturbative stochastic method for driven spin-boson model*
 Peter P. Orth, Adilet Imambekov, Karyn Le Hur Phys. Rev. B **87**, 014305 (2013).
76 *Scaling of Entanglement Entropy across Lifshitz transitions*,
 Marlon Rodney, H. Francis Song, Sung-Sik Lee, Karyn Le Hur, Erik Sorensen, Phys. Rev. B **87**,
 115132 (2013).

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- 75** *Kondo resonance of a microwave photon*
 Karyn Le Hur, Phys. Rev. B **85** 140506 (2012).
74* *Bipartite Fluctuations as a Probe of Many-Body Entanglement* H. Francis Song, Stephan Rachel,
 Christian Flindt, Israel Klich, Nicolas Laflorencie, Karyn Le Hur, arXiv:1109.1001, 30 pages+25
 pages Supplementary Material
 Phys. Rev. B **85**, 035409 (2012), Editors' Suggestion
73 *Quantum Spin Hall Insulators with Interactions and Lattice Anisotropy*, Wei Wu, Stephan Rachel,
 Wu-Ming Liu and Karyn Le Hur, arXiv:1106.0943 and published Phys. Rev. B **85**, 205102 (2012).
72 *Anomalous Hall Effects of Light and Chiral Edge Modes on the Kagome Lattice*
 Alexandru Petrescu, Andrew Houck, Karyn Le Hur, Phys. Rev. A **86**, 053804 (2012).
71 *Time-reversal invariant Hofstadter-Hubbard model with Ultracold Fermions*
 Daniel Cocks, Peter P. Orth, Stephan Rachel, Michael Buchhold, Karyn Le Hur, Walter Hofstetter,
 Phys. Rev. Lett. **109**, 205303 (2012)
70 *Detecting Quantum Critical Points using Bipartite Fluctuations*, Stephan Rachel, Nicolas Laflo-
 rencie, H. Francis Song, Karyn Le Hur, Phys. Rev. Lett. **108**, 116401 (2012)
69 *Heisenberg Uncertainty Principle as a Probe of Entanglement Entropy: Application to Superradiant Quantum Phase Transitions* Pierre Nataf, Mehmet Dogan, Karyn Le Hur Phys. Rev. A **86**, 043807 (2012)
68 *Noninvasive Probes of Charge Fractionalization in Quantum Spin-Hall Insulators*, Ion Garate
 and Karyn Le Hur, Phys. Rev. B **85**, 195465 (2012)
67 *d-wave superfluid with Gapless Edges in a Cold Atom Trap*, Anne-Louise Gadsbolle, H. Francis
 Song, Karyn Le Hur, Phys. Rev. A **85**, 051603(R) (2012).

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- 66*** *Effective Equilibrium Theory in NonEquilibrium Quantum Transport*, by Prasenjit Dutt, Jens
 Koch, J. Han and Karyn Le Hur, arXiv:1101.1526, 53 pages Annals of Physics **326** 2963-2999 (2011).
65 *Giant Charge Relaxation Resistance in the Anderson Model*, Michele Filippone, Karyn Le Hur
 and Christophe Mora, Phys. Rev. Lett. **107**, 176601 (2011).
64 *Entanglement Entropy of the Two-Dimensional Heisenberg Antiferromagnet*, H. Francis Song,

- Nicolas Laflorencie, Stephan Rachel, Karyn Le Hur, Phys. Rev. B **83**, 224410 (2011).
63 *Entanglement from Charge Statistics: Exact Relations for Many-Body Systems*, H. Francis Song, Christian Flindt, Stephan Rachel, Israel Klich, Karyn Le Hur, Phys. Rev. B **83**, 161408(R) (2011).
62 *Designing Heterostructures with Higher Temperature Superconductivity*, Karyn Le Hur, Chung-Hou Chung, I. Paul, Phys. Rev. B **84**, 024526 (2011).
61 *Effective Thermodynamics of a coupled Two-level system*, N. S. Williams, K. Le Hur and A. Jordan, J. Phys. A: Math. Theor. **44** (2011) 385003.

Publications 2010

- 60** *Time-reversal symmetry breaking in circuit-QED based photon lattices*, Jens Koch, Andrew Houck, Karyn Le Hur and S. M. Girvin, Phys. Rev. A **82**, 043811 (2010).
 See also Viewpoint: Andrew D. Greentree and Andrew M. Martin Physics **3**, 85 (2010).
59 *Dynamics, Synchronization and Quantum Phase Transitions of Two Dissipative Spins*, Peter P. Orth, David Roosen, Walter Hofstetter and Karyn Le Hur, Phys. Rev. B **82**, 144423 (2010) (Editors' Suggestion).
58 *Topological Insulators and Mott physics from the Hubbard Interaction*, Stephan Rachel and Karyn Le Hur, Phys. Rev. B **82**, 075106 (2010).
57 *Tunable Kondo-Luttinger systems far from equilibrium*, C.-H. Chung, K.V.P. Latha, K. Le Hur, M. Vojta and P. Wölfle, Phys. Rev. B **82**, 115325 (2010).
56 *General Relation between Entanglement and Fluctuations in One Dimension*, Francis Song, Stephan Rachel and Karyn Le Hur, Phys. Rev. B **82**, 012405 (2010).
55 *Universal Resistances of the Quantum RC circuit*, Christophe Mora and Karyn Le Hur, *Nature Physics*, **6** 697 (2010).
54 *Universality in dissipative Landau-Zener transitions*, Peter P. Orth, Adilet Imambekov and Karyn Le Hur, Phys. Rev. A **82**, 032118 (2010).
53 *Electric field Tuned Dimensional Crossover in Ar-Irradiated SrTiO₃*, J. H. Ngai, Y. Segal, F. J. Walker, S. Ismail-Beigi, K. Le Hur and C. H. Ahn, Phys. Rev. B **81**, 241307(R) (2010).

Publications 2009

- 52*** *Superconductivity close to the Mott state: From condensed-matter systems to Superfluidity in optical lattices*, K. Le Hur and T. Maurice Rice, review article, *Annals of Physics* **324**, 1452-1515 (2009), Special Issue July, arXiv:0812.1581, 98 pages
51 *Theory of non-equilibrium transport in the SU(N) Kondo regime*, Christophe Mora, Pavel Vitushinsky, Xavier Leyronas, Aashish A. Clerk, Karyn Le Hur, arXiv:0906.2791, 17 pages. *Phys. Rev. B* **80**, 155322 (2009) (Editors' suggestion).
50 *Superfluid-Mott Insulator Transition of Light in the Jaynes-Cummings Lattice*, Jens Koch and Karyn Le Hur, *Phys. Rev. A* **80**, 023811 (2009), 13 pages.
49 *Supersolidity of Cold Atomic Bose-Fermi mixtures in optical lattices*, P. P. Orth, D. L. Bergman, and K. Le Hur, *Phys. Rev. A* **80**, 023624 (2009).
48 *Topological Zero modes in fermionic condensate phases on the honeycomb lattice*, Doron Bergman and Karyn Le Hur, *Phys. Rev. B* **79**, 184520 (2009) [25 pages]
47 *Non-equilibrium transport at a dissipative quantum phase transition*, Chung-Hou Chung, Karyn Le Hur, Matthias Vojta, Peter Wölfle, *Phys. Rev. Lett.* **102**, 216803 (2009).
46 *Entanglement, decoherence, and dynamics of a two-state system*, Karyn Le Hur
 Proceedings of PQE conference 2009, Snowbird, *Journal of Modern Optics* Volume 56, Numbers 18-19, October 2009, pp. 2106-2111(6), Taylor and Francis

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- 45** *Charge fractionalization in Quantum Wires*,
Hadar Steinberg, Gilad Barak, Amir Yacoby, Loren N. Pfeiffer, Ken W. West, Bert Halperin, Karyn Le Hur, *Nature Physics* **4**, 116 (2008).
- 44** *Charge Fractionalization in nonchiral Luttinger systems*,
K. Le Hur, B. I. Halperin, A. Yacoby, *Annals of Physics* **323**, 3037-3058 (2008).
- 43** *Shot noise in $SU(N)$ Quantum Dot Kondo effects*,
P. Vitushinsky, A. A. Clerk, and K. Le Hur, *Phys. Rev. Lett.* **100**, 036603 (2008).
- 42** *Discontinuous current-phase relations in small 1D Josephson junction arrays*,
Jens Koch and Karyn Le Hur, *Phys. Rev. Lett.* **101**, 097007 (2008).
- 41** *Dissipative Quantum Ising model in a cold atomic spin-boson mixture*,
Peter P. Orth, Ivan Stanic, Karyn Le Hur, *Phys. Rev. A* **77**, 051601 (2008).
- 40** *Double-gap superconducting proximity effect in nanotubes*,
Karyn Le Hur, Smitha Vishveshwara, Cristina Bena, *Phys. Rev B* **77**, 041406(R) (2008).
- 39*** *Entanglement Entropy, decoherence, quantum phase transition of a dissipative two-level system*,
Karyn Le Hur, *Annals of Physics* **323**, 2208-2240 (2008) (34 pages).

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- 38** *Entanglement and Criticality in Quantum Impurity Systems*,
K. Le Hur, Ph. Doucet-Beaupré, W. Hofstetter, *Phys. Rev. Lett.* **99**, 126801 (2007).
- 37** *Universal and Measurable entanglement entropy in the spin-boson model*,
Angela Kopp and Karyn Le Hur, *Phys. Rev. Lett.* **98**, 220401 (2007) - General section.
- 36** *Transport through a quantum dot with $SU(4)$ entanglement*,
K. Le Hur, P. Simon, D. Loss, *Phys. Rev. B* **75**, 035332 (2007).
- 35** *Heavy fermion solution for electrons Hund's coupled to a spin liquid*,
Karyn Le Hur, *Phys. Rev B* **75**, 014435 (2007).

Publications 2006

- 34** *The electron lifetime in Luttinger liquids*,
Karyn Le Hur, *Phys. Rev B* **74**, 165104 (2006).
- 33** *Coulomb drag between two spin incoherent Luttinger liquids*,
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- 32** *A Mesoscopic Resonating Valence Bond system on a triple dot*,
K. Le Hur, Patrik Recher, Émilie Dupont, Daniel Loss, *Phys. Rev. Lett.* **96**, 106803 (2006).
- 31** *Decoherence of Einstein-Podolsky-Rosen pairs in a noisy Andreev entangler*,
Émilie Dupont and Karyn Le Hur, *Phys. Rev. B* **73**, 045325 (2006).

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- 30** *Transport in a Spin-Incoherent Luttinger liquid*,
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- 29** *Dephasing of Mesoscopic Interferences from Electron Fractionalization*,
Karyn Le Hur, *Phys. Rev. Lett.* **95**, 076801 (2005).
- 28** *Hidden Caldeira-Leggett dissipation in a Bose-Fermi Kondo model*,
Mei-Rong Li, Karyn Le Hur and Walter Hofstetter, *Phys. Rev. Lett.* **95**, 086406 (2005).
- 27** *Unification of electromagnetic noise and Luttinger liquid via a resonant level*,
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- 26** *Probing spin and orbital Kondo effects with a mesoscopic interferometer*,
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25 *Quantum Dot in the pseudogap Kondo state*,
J. Hopkinson, K. Le Hur, and É. Dupont, Eur. Phys. J. B **48**, 429-432 (Letter) (2005).

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