

CURRICULUM VITAE: UMA DIVAKARAN

PERSONAL INFORMATION	Uma Divakaran, Assistant Professor, Indian Institute of Technology Palakkad, Ahalia Integrated Campus, Kozhipara P.O, Palakkad, Kerala-678557, Email:uma.ker@gmail.com,uma@iitpkd.ac.in Tel:04923-226321
CORRESPONDENCE ADDRESS	Uma Divakaran, Assistant Professor, Indian Institute of Technology Palakkad, Ahalia Integrated Campus, Kozhipara P.O, Palakkad, Kerala-678557
EDUCATION	M. Sc.-Ph.D Dual Degree, Indian Institute of Technology Kanpur. Thesis Title: Slow Quenching dynamics in quantum critical systems (2010). B. Sc. (Physics), Miranda House, University of Delhi, Delhi (2003).
RESEARCH INTERESTS	Quantum phase transitions, Non-equilibrium dynamics in quantum phase transitions. Statistical mechanics of models of fracture and breakdown like fiber bundle model.
JOURNAL PUBLICATIONS	The information presented is as obtained from the Google Scholar page https://scholar.google.co.in/citations?user=Mnq2unEAAAAJ&hl=en&cstart=20&pagesize=20 . The Impact factor is that of the year 2014. <ol style="list-style-type: none">1. Uma Divakaran, Shraddha Sharma and Amit Dutta Tuning the presence of dynamical phase transitions in a generalized XY spin chain Phys. Rev. E 93, 052133 (2016), http://link.aps.org/doi/10.1103/PhysRevE.93.052133 Impact Factor: 2.2, Citations:82. Shraddha Sharma, Uma Divakaran, A. Polkovnikov and Amit Dutta Slow quenches in a quantum Ising chain; dynamical phase transitions and topology Phys. Rev. B 93, 144306 (2016), http://dx.doi.org/10.1103/PhysRevB.93.144306 Impact Factor: 3.7, Citations:33. Atanu Rajak and Uma Divakaran, Effect of double local quenches on Loschmidt echo and entanglement entropy of a one-dimensional quantum system,

- J. Stat. Mech. 043107 (2016),
Impact Factor: 2.4, Citations:1
<http://dx.doi.org/10.1088/1742-5468/2016/04/043107>
4. Uma Divakaran and K. Sengupta,
Dynamic freezing and defect suppression in the tilted one-dimensional Bose-Hubbard model,
Phys. Rev. B 90, 184303 (2014).
Impact Factor:3.7, Citations:5,
<http://link.aps.org/doi/10.1103/PhysRevB.90.184303>
 5. Gergo Roosz, Uma Divakaran, H. Rieger, F. Iglói,
Nonequilibrium quantum relaxation across a localization-delocalization transition,
Phys.Rev.B 90, 184202 (2014).
Impact Factor:3.7, Citations:2,
<http://link.aps.org/doi/10.1103/PhysRevB.90.184202>
 6. Atanu Rajak and Uma Divakaran,
Fidelity susceptibility and Loschmidt echo for generic paths in a three spin interacting transverse Ising model,
J. Stat. Mech (2014) P04023.
Impact Factor: 2.4, Citations:-
<http://iopscience.iop.org/1742-5468/2014/4/P04023/article>
 7. Uma Divakaran,
The three site interacting spin chain in a staggered field: Fidelity versus Loschmidt echo
Phys. Rev. E. 88, 052122 (2013).
Impact factor: 2.2, Citations:6
<http://link.aps.org/doi/10.1103/PhysRevE.88.052122>
 8. Tanay Nag, Uma Divakaran and Amit Dutta,
Scaling of the decoherence factor of a qubit coupled to a spin chain driven across quantum critical points.
Phys. Rev. B (Rapid Comm.) 86, 020401 (2012).
Impact factor: 3.7, Citations:20
<http://link.aps.org/doi/10.1103/PhysRevB.86.020401>
 9. Uma Divakaran, Ferenc Iglói and Heiko Rieger,
Non-equilibrium quantum dynamics after local quenches.
J. Stat. Mech 11, 10027 (2011).
Impact factor: 2.4, Citations:25
<http://iopscience.iop.org/1742-5468/2011/10/P10027>
 10. Amit Dutta, R. R. P. Singh and Uma Divakaran,
Quenching through Dirac and semi-Dirac points in optical Lattices: Kibble-Zurek scaling for anisotropic Quantum-Critical systems.
Europhys. Lett. 89, 67001 (2010)
Impact factor: 2.0, Citations:30
<http://dx.doi.org/10.1209/0295-5075/89/67001>
 11. Uma Divakaran, Amit Dutta and Diptiman Sen,
Landau-Zener problem with waiting at the minimum gap and related quench dynamics of a many body system.
Phys. Rev. B 81, 054306 (2010).

- Impact factor: 3.7, Citations:14
<http://link.aps.org/doi/10.1103/PhysRevB.81.054306>
12. Debanjan Chowdhury, Uma Divakaran and Amit Dutta,
 Adiabatic dynamics in passage across quantum critical lines and gapless phases.
 Phys. Rev. E 81, 012101 (2010).
 Impact factor: 2.2, Citations:13
<http://link.aps.org/doi/10.1103/PhysRevE.81.012101>
 13. Uma Divakaran and Amit Dutta,
 Reverse quenching in a one-dimensional Kitaev model.
 Phys. Rev. B 79, 224408 (2009).
 Impact factor: 3.7, Citations:15
<http://link.aps.org/doi/10.1103/PhysRevB.79.224408>
 14. Uma Divakaran, Victor Mukherjee, Amit Dutta and Diptiman Sen,
 Defect production due to quenching through a multicritical point.
 J. Stat. Mech: Theory and Experiment (2009) P02007.
 Impact factor: 2.4, Citations:20
<http://iopscience.iop.org/1742-5468/2009/02/P02007>
 15. Uma Divakaran, Amit Dutta and Diptiman Sen,
 Quenching along a gapless line: A different exponent for defect density.
 Phys. Rev. B 78, 144301 (2008).
 Impact factor: 3.7, Citations:60
<http://link.aps.org/doi/10.1103/PhysRevB.78.144301>
 16. Uma Divakaran and Amit Dutta,
 Random fiber bundle with many discontinuities in threshold distribution.
 Phys. Rev. E 78, 021118 (2008).
 Impact factor: 2.2, Citations:7
<http://link.aps.org/doi/10.1103/PhysRevE.78.021118>
 17. Uma Divakaran and Amit Dutta,
 The effect of the three-spin interaction and the next nearest neighbor interaction on the quenching dynamics of a transverse Ising model.
 J. Stat. Mech: Theory and Experiment, November, P11001 (2007).
 Impact factor: 2.4, Citations:-
<http://iopscience.iop.org/1742-5468/2007/11/P11001>
 18. Victor Mukherjee, Uma Divakaran, Amit Dutta and Diptiman Sen,
 Quenching Dynamics of a quantum XY spin-1/2 chain in a transverse field,
 Phys. Rev. B 76, 174303 (2007).
 Impact factor: 3.7, Citations:104
<http://link.aps.org/doi/10.1103/PhysRevB.76.174303>
 19. Uma Divakaran and Amit Dutta,
 Fibers on a graph and local load sharing.
 Int. J. Modern Physics C 18, 6, (2007).
 20. Uma Divakaran and Amit Dutta,
 Critical behaviour of random fibers with mixed Weibull Distribution.
 Phys. Rev. E. 75, 011109 (2007).
 Impact factor: 2.2, Citations:20
<http://link.aps.org/doi/10.1103/PhysRevE.75.011109>

21. Uma Divakaran and Amit Dutta,
Effect of discontinuity in the threshold distribution on the critical behavior
of a random fiber bundle.
Phys. Rev. E, 75, 011117 (2007).
Impact factor: 2.2, Citations:18
<http://link.aps.org/doi/10.1103/PhysRevE.75.011117>

PUBLISHED BOOK

1. Quantum phase transitions in transverse field spin models: From Statistical
Physics to Quantum Information
A. Dutta, G. Aeppli, B. K. Chakrabarti, U. Divakaran, T. F. Rosenbaum
and D. Sen, Cambridge University Press

CONFERENCE PROCEEDINGS

1. Victor Mukherjee, Uma Divakaran, Amit Dutta and Diptiman Sen,
Quenching dynamics of a quantum XY spin-1/2 chain in the presence of
transverse field by the application of a generalized LandauZener formula.
Pramana journal of physics, Vol. 71, No. 2, 403, (2008).
2. Uma Divakaran and Amit Dutta,
Long-range connections, quantum magnets and dilute contact processes.
Physica A Vol. 384, 39 (2007).

ARTICLES IN BOOKS

1. Uma Divakaran, Victor Mukherjee, Amit Dutta and Diptiman Sen, *Defect
production due to quenching through a multicritical point and along a gapless
line*, Quantum Quenching, Annealing and Computation, Edited by Anjan K
Chandra, Arnab Das and B. K. Chakrabarti. Lecture Notes Physics, Vol
802, pages 57-73 (2010), Springer-Verlag Berlin Heidelberg (2010).
2. Uma Divakaran and Amit Dutta, *Critical Behaviour of Mixed Fibers with
Uniform Distribution*, Modelling critical and catastrophic phenomena in geo-
science, page 515-520. Ed. by P. Bhattacharyya and B. K. Chakrabarti,
Springer-Verlag -2006.

SCHOOLS, CONFERENCES AND WORKSHOPS

1. International Conference on Complex Quantum Systems, BARC Mumbai,
20-23rd February, Invited Speaker
2. Statphys Kolkata IX, 13-16 December 2016, Saha Institute of Nuclear Physics,
Kolkata, Invited speaker
3. Quantum Disordered systems, 1-3 March 2016, Institute of Mathematical
Sciences, Chennai, Invited speaker
4. Focussed workshop on *Many Body dynamics out of equilibrium*, 10-14 March
2015, Max Planck Institute for the Physics of Complex Systems, Dresden,
Germany.
5. School and workshop on Physics of Cold Atoms, 10-16 February 2014, Harish
Chandra Research Institute, Allahabad (India).
6. ICTS program on "US-INDIA Advanced Studies Institute on Thermaliza-
tion: From Glasses to Black Boles", 10 June 2013-21 June 2013, Indian
Institute of Science, Bangalore.

7. ICTS program on Non-Equilibrium Statistical Physics, 30 Jan -08 February 2010, Indian Institute of Technology Kanpur.
Poster presentation, Waiting in Kitaev model
8. Summer College on nonequilibrium physics from classical to quantum low dimensional systems. 6-July 2009 to 24 July 2009, International Centre for Theoretical Physics, Trieste, Italy.
Poster Presentation, Title: A study of reverse quenching in one-dimensional Kitaev model.
9. Condensed Matter Workshop Feb 20-22, 2009 at Indian Institute of Technology Kanpur, India
Poster Presentation, Title: A study of reverse quenching in a one-dimensional Kitaev model. (Best Poster award)
10. International Conference on Quantum Phase Transition and Dynamics: Quenching, Annealing and Quantum Computation. Feb 3-7, 2009 at Saha Institute of Nuclear Physics, Kolkata, India.
Poster Presentation, Title: A Study of reverse quenching in one-dimensional Kitaev model.
11. Unconventional Phases and Phase transitions in strongly correlated electron systems. June 3-7, 2008 at Max Planck Institute for Physics of Complex Systems, Dresden, Germany.
Poster Presentation, Title: The effect of three spin interaction and next nearest neighbor interaction on the quenching dynamics of a transverse Ising model.
12. International Conference on Statphys-Kolkata VI. January 5-9 at Kolkata India, 2007.
Poster presentation, Title: Crossover from non-universal to universal behavior in a random fiber bundle model.
13. International workshop on Mesoscopic and Disordered Systems, December 4-8, 2006. Indian Institute of Technology, Kanpur, India.
Poster Presentation, Title: Quantum Annealing of ANNNI model- A preliminary study.
14. SERC School in Condensed Matter and Materials Physics. March 1-28, 2006, BHU, Varanasi, India.
15. International Workshop on Models of Earthquake: Physics Approaches December 13-16, 2005, Saha Institute of Nuclear Physics, Kolkata, India.
Oral and Poster Presentation, Title: Dynamics of Random Fiber Bundle Model
16. Condensed Matter Workshop, February 4-6, 2005, Indian Institute of Technology Kanpur.
Poster Presentation, Title: Critical behaviour of Random Fiber Bundle Model

TALKS

1. International Conference on Complex Quantum Systems, BARC Mumbai, 20-23rd February, Invited Speaker
2. Statphys Kolkata IX, 13-16 December 2016, Saha Institute of Nuclear Physics, Kolkata, Invited speaker

3. Invited speaker in the conference on "Quantum disordered systems", IMSc, Chennai, March 2016
Title: Non-equilibrium dynamics in localization-delocalization transition
4. Colloquium at Chennai Mathematical Institute, Chennai
Title: Slow quenches in quantum systems
5. Department of Physics, IIT Mumbai, January 2016
Title: Nonequilibrium dynamics in quantum phase transitions
6. Discussion meeting on non-equilibrium dynamics and ultra cold atoms, IACS, Kolkata, May 2014
Title: Decoherence of a qubit coupled to a driven spin chain
7. Department of Physics, IIT Madras, April 2014
Title: Quantum quenches and semiclassical theory.
8. School of Physical Sciences, Jawaharlal Nehru University, New Delhi, November 2013.
Title: Understanding quantum quenches using semiclassical theory.
9. Department of Physics, Indian Association for Cultivation of Sciences, Kolkata, India, September (2013).
Title: Understanding quantum quenches using semiclassical theory.
10. Department of Physics, Saarland University, Germany, April (2010).
Title: Quenching dynamics in quantum critical systems.
11. Institute of Mathematical Sciences, Chennai, India. March 10th, 2008.
Title: Effect of discontinuity in a random fiber bundle model
12. International Workshop on Models of Earthquake: Physics Approaches December 13-16, 2005, Saha Institute of Nuclear Physics, Kolkata, India.
Title: Dynamics of Random Fiber Bundle Model

RESEARCH VISITS

1. Visitor, Department of Physics, Indian Association for Cultivation of Sciences, Kolkata, India, September (2013).
2. Visitor, Department of Theoretical Solid State Physics, SZFKI, Budapest, Hungary. September-October 2012.
3. Visitor, Center for High Energy Physics, Indian Institute of Science Bangalore. September-October 2009.
4. Junior Guest Scientist, Condensed Matter and Statistical Physics Section, International Centre for Theoretical Physics (ICTP), Trieste Italy from 2nd June 2009 to 29th June 2009.
5. Visitor, International School for Advanced Studies (SISSA/ISAS), Trieste, Italy from 8th June 2008 to 18th June 2008.

AWARDS

1. Selected in UGC-Faculty Recharge Program (2013).
2. Awarded Fast Track Project entitled "Non-equilibrium quantum dynamics and decoherence" (declined)
3. INSPIRE Faculty Award (2012), Department of Science and Technology, India (accepted).

4. Alexander von Humboldt Fellowship starting from September 1, 2010-Feb 2011 and from May 2012-November 2012.
5. Selected Junior Associate of the International Centre for Theoretical Physics (ICTP), Trieste, Italy from 1st January-2009 until 31st December 2014.

PROFESSIONAL
ACTIVITIES

Referee in the following Journals:

1. APS Journals-Phys. Rev. Letters, Phys. Rev. B, Phys. Rev. E
2. Euro Physics Letters