

LIST OF PUBLICATIONS (Deepak Dhar)

A. Self- Organized Criticality

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2. Self-organized critical state of sandpile automaton models, Phys. Rev. Lett. **64** (1990) 1613.
3. Abelian sandpile model on the Bethe lattice, (+ S. N. Majumdar), J. Phys. **A23** (1990) 4333.
4. A simple soluble model of self-organized criticality in *Current Trends in Condensed Matter, Particle Physics and Cosmology*, Eds. J. Pati, Q. Shafi, S. Wadia and Yu Lu, (World Scientific, Singapore, 1990) p117.
5. Height correlations in the abelian sandpile model,(S. N. Majumdar +), J. Phys. **A24** (1991) L357.
6. The abelian sandpile model of self -organized criticality, in *Computer-aided studies of statistical physics*, AIP conference proceedings **248**, (Taipei, 1991), Ed. C. K. Hu (AIP, New York, 1992).
7. Equivalence of the abelian sandpile model and the $q \rightarrow 0$ limit of the Potts model, (S. N. Majumdar +) Physica **A185** (1992) 129.
8. Sandpiles and self-organized criticality, Physica **A186** (1992) 82.
9. Spanning trees in two dimensions, (S. S. Manna, D.D. and S. N. Majumdar), Phys. Rev. **A46** (1992) R4471.
10. Inverse avalanches in the abelian sandpile model, (+ S. S. Manna) Phys. Rev. **E49** (1994) 2684.
11. Breakdown of simple scaling in Abelian sandpile models in one dimension , (A. A. Ali +), Phys. Rev. **E51** (1995) R2705. [cond-mat 9412085]

12. Algebraic aspects of Abelian sandpile models, (+ P. Ruelle, S. Sen, D. N. Verma) J. Phys. **A28** (1995) 805. [cond-mat 9408022]
13. Structure of avalanches and breakdown of simple scaling in Abelian sandpile model in one dimension, (A. A. Ali +), Phys. Rev. **E52** (1995) 4804.
14. Extended operator algebra for abelian sandpile models, Physica **A 224** (1996) 162.
15. Eulerian walkers as a model of self-organized criticality, (V. B. Priezhev, A. Dhar, S. Krishnamurthy +), Phys. Rev. Lett., **77** (1996) 5079. [cond-mat 9611019]
16. Distribution of sizes of erased loops for loop-erased random walks, (+ A. Dhar), Phys. Rev. **E55** (1997) R2093. [cond-mat 9704026]
17. Emergent spatial structures in critical sandpiles, (B. Tadic +), Phys. Rev. Lett. **79** (1997) 1519. [cond-mat 9707151].
18. The abelian sandpile and related models, Physica **A 263** (1999) 4. [cond-mat 9808047]
19. Some results and a conjecture for Manna's stochastic sandpile model, Physica **A 270** (1999) 69. [cond-mat 9902137]
20. Studying Self-Organized Criticality with Exactly Solved Models. [cond-mat 9909009]
21. An Introduction to Self-organized Criticality, in *Condensed Matter Physics*, Eds. B. K. Agrawal and H. Prakash, Proceedings of the K. S. Krishnan Symposium, Univ. of Allahabad, Dec. 1998, (Narosa, New Delhi, 1999).
22. Continuously varying critical exponents in a sandpile model with dissipation near surface, (S. Lubeck +), J. Stat. Phys., **102** (2001) 1. [cond-mat 0006490]
23. Distribution of sizes of erased loops of loop-erased random walks in two and three dimensions (H. Agrawal +), Phys. Rev. **E 63** (2001) 056115. [cond-mat 0012102]

24. Probability distribution of sizes of largest erased loops in loop-erased random walks (H. Agrawal +), Phys. Rev. **E 65** (2002) 031108. [cond-mat 0107246]
25. Generic sandpiles have directed percolation exponents, (P. K. Mohanty +), Phys. Rev. Lett. **89** (2002) 5. [cond-mat 0202345]
26. Steady State and Relaxation Spectrum of the Oslo Rice-pile model, Physica **A 340** (2004) 535.
27. Theoretical studies of sandpile models of self-organized criticality, TWAS physics 2002 award lecture given at Third world Academy of Sciences 20th Annual meeting, Beijing, Oct. 16-19,2003.
28. Probability distribution of residence-times of grains in sandpile models, (+ P. Pradhan), J. Stat. Mech: Theory and Exper., (2004) P05002. [cond-mat/ 0404019]
29. Probability distribution of residence times of grains in models of ricepiles, (P. Pradhan +), Phys. Rev. **E 73**, 021303(2006). [cond-mat/0511237]
30. Theoretical studies of self-organized criticality, Physica **A 369** (2006) 29.
31. Sampling rare fluctuations of height in the Oslo ricepile model, (P. Pradhan+), J. Phys. A: Math. Theo. **40** (2007) 2639. [cond-mat 0608144]
32. Critical behavior of sandpile models with sticky grains,(P.K. Mohanty +), Physica **A 384** (2007) 34. [cond-mat/0704.2142]
33. Emergence of quasi-units in the one-dimensional Zhang model, (Tridib Sadhu +), Phys. Rev. E, **77**, 031122(2008). [arXiv:0711.3021]
34. Pattern formation in growing sandpiles, (+ T. Sadhu and S. Chandra), submitted, [arXiv:0808.1732]
35. Steady state of stochastic sandpile models, (T. Sadhu +), J. Stat. Phys., **134** (2009) 427.

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37. Pattern formation in growing sandpiles with multiple sources or sinks, (Tridib Sadhu +), J. Stat. Phys. **138**:815 (2010). [arXiv:0909.3192]
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B. Hysteresis

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2. Self-organized criticality with continuously varying critical exponents, (+ P. B. Thomas), Europhys. Lett. **29** (1993) 965.
3. Hysteresis in isotropic spin systems, (P. B. Thomas +), J. Phys **A26** (1993) 3973.
4. Zero-temperature hysteresis in random-field Ising model on a Bethe lattice, (+ P. Shukla and J. P. Sethna), J. Phys. **A30** (1997) 5259 [cond-mat 9611028].
5. Distribution of avalanche sizes in the hysteretic response of random-field Ising model on Bethe lattice (S. Sabhapandit, P. Shukla +), J. Stat. Phys. **98** (2000) 103. [cond-mat 9905236]
6. Hysteresis in the random-field Ising model and bootstrap percolation, (S. Sabhapandit, D.D. and P. Shukla), Phys. Rev. Lett., **88** (2002) 197202. [cond-mat 0204618]

C. Relaxation in systems with strongly broken ergodicity

1. Conservation laws for stochastic deposition-evaporation models in one dimension, (+ M. Barma), Pramana, **41** (1993) L193.

2. Slow relaxation in a model of deposition and evaporation in one dimension,(M. Barma + D.D.) (long abstract), Proc. Solid State Physics Symposium, (Bhabha Atomic Research Centre, Bombay, Dec. 27-31,1993) **36-C**,489.
3. Slow relaxation in a model with many conservation laws: deposition and evaporation of trimers on a line, (M. Barma +), Phys. Rev. Lett. **73** (1994) 2135. [cond-mat 9408031]
4. Numerical diagonalization study of the trimer evaporation - deposition model in one dimension, (P. B. Thomas, M. K. Hari Menon +), J. Phys. **A27** (1994) L831. [cond-mat 9404028]
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7. Deposition and evaporation of k-mers: dynamics in a many sector decomposable system (M. Barma +), Proc. of Statphys 19 (Xiamen,1995), Ed. B.-L. Hao, (World Scientific, Singapore,1996), p72.
8. Diffusing reconstituting dimers: a simple model of broken ergodicity and ageing, Proc. of 'Dynamics of Fluctuating Interfaces and Related Phenomena' held at Seoul (1997), Eds. D. Kim, H. Park, and B. Kahng, (World Scientific, Singapore, 1997) p293. [cond-mat 9702192]
9. Conservation laws and integrability of a one-dimensional model of diffusing dimers,(G.I. Menon, M. Barma +), J. Stat. Phys. **86** (1997) 1237. [cond-mat 9703059]
10. A model of subdiffusive interface dynamics with a local conservation of minimum height, (H. M. Koduvely +), J. Stat. Phys. **90** (1998) 57. [cond-mat 9704139]

11. Pico-canonical ensembles: a theoretical description of metastable states, *Physica A* **315** (2002) 5. [cond-mat 0205011]
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D. Percolation and Animal Problems

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2. Duality transformation for two dimensional directed percolation and resistance problems, (+ M. Barma and M.K. Phani) *Phys. Rev. Lett.* **47** (1981) 1238.
3. Real - space renormalization group : Application to directed percolation (M.K. Phani +), *J. Phys.* **C15** (1982) 1391.
4. Diode resistor percolation in two and three dimensions I: Upper bounds on critical probability, *J. Phys.* **A15** (1982) 1849.
5. Directed percolation in two and three dimension II: Direction dependence of the wetting velocity, *J. Phys.* **A15** (1982) 1859.
6. Enumeration of directed site animals on two dimensional lattices (+ M. K. Phani and M. Barma), *J. Phys.* **A15** (1982) L279.
7. Equivalence of the two dimensional directed site animals problem to Baxter's hard square lattice gas model, *Phys. Rev. Lett.* **49** (1982) 959.
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9. Conductivity of a two dimensional random diode-insulator network (B. M. Arora, M. Barma and M. K. Phani +), *J. Phys.* **C16** (1983) 2913.
10. Directed percolation and animal problems, in *Science Academy Medals for Young Scientists-Lectures* (Indian National Science Academy, New Delhi, 1983).

11. Continuum percolation of discs with a distribution of radii, (M. K. Phani +), *J. Phys.* **A17** (1984) L645.
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13. Some exact results for polymer models, *Physica* **140A** (1986) 210.
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15. Rooted spiral trees in dimensions 2, 3 and 4, (I. Bose, P. Ray +), *J. Phys.* **A21** (1988) L219.
16. Longitudinal size exponent for two dimensional directed animals, *J. Phys.* **A21** (1988) L893.
17. Melts of semiflexible polymers: the statistical mechanics of lattice models, (G. I. Menon, R. Pandit, M. Barma +), *Proc. Solid State Physics Symposium 1990*, **33C**, (BARC, Bombay,1991)
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23. The adsorption and collapse transitions in a linear polymer chain near an attractive wall (R. Rajesh, D.D., Debaprasad Giri, Sanjay Kumar, and Y. Singh), *Phys. Rev E.* **65** (2002) 056124. [cond-mat 0107510]

24. Distribution of transverse distances in directed animals, (Sumedha +), J. Phys. A: Math. Gen. **36** (2003) 3701.
25. Efficiency of the Incomplete Enumeration algorithm for Monte-Carlo simulation of linear and branched polymers, (Sumedha +), J. Stat. Phys., **120** (2005) 71. [cond-mat/ 0408640]
26. Convex lattice polygons of fixed area with perimeter-dependent weights, (R. Rajesh +), Phys. Rev. **E 71** (2005) 016130.
27. Graphical enumeration techniques in statistical physics: I Series expansions and animal problems, Notes of a course of 6 lectures given in the *S.E.R.C. School on Computational Statistical Physics*, held at I.I.T. Guwahati, Dec 01-15, 2008.
28. Scaling relation for determining the critical threshold for continuum percolation of overlapping discs of two sizes, (A.C. Balram +), Pramana, **74**,109 (2010). [arXiv:0907.1768]

E. Real Space Renormalization Group studies on fractals

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2. Self-avoiding random walks: some exactly soluble cases, J. Math. Phys. **19** (1978) 5.
3. On the connectivity index for lattices of nonintegral dimensionality, Pramana **15** (1980) 545.
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5. Fractals, Bull. Material Science, **6** (1984) 817.
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7. Critical exponents of self avoiding walks on fractals with dimensions $2-\epsilon$, J. Physique (Paris) **49** (1988) 397.

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9. Polymers on fractal lattices, in *Polymer physics: 25 years of the Edwards' model*, Ed. S. M. Bhattacharjee (World Scientific, Singapore, 1992).
10. Surface adsorption of a self-avoiding polymer chain on a family of finitely ramified fractals, (S. Kumar, Y. Singh +), J. Phys. **A26** (1993) 4835.
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12. Linear and branched polymers on fractals, (+ Y. Singh), in *Statistics of Polymers in Random Media*, Ed. B. K. Chakrabarti, (World Scientific, Singapore, 2005), p149. [cond-mat/0508330]
13. Quenched averages for self avoiding walks and polygons on deterministic fractals, (Sumedha +), J. Stat. Phys., **125** (2006) 55. [cond-mat/0512051]
14. Critical behavior of loops and biconnected clusters on fractals of dimension $d < 2$, (D. Das, S. Dey, J. L. Jacobsen + DD), J. Phys. A: Math. Theo., **41**, 485001 (2008).

F. Relaxation in disordered magnets

1. Long-time relaxation in disordered Ising chains, (+ M. Barma), J. Appl. Phys. **50** (1979) 7407.
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4. Stochastic evolution in Ising models, in *Stochastic Processes: Formalism and Applications*, Eds. G. S. Agarwal and S. Dattagupta, Lecture Notes in Physics **184** (Springer, Berlin, 1983), p.300.

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6. Dynamic Griffiths singularities in disordered Ising models (+ M. Randeria and J. P. Sethna), *Europhys. Lett.* **5** (1988) 485.
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G. Diffusion in disordered media

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3. Classical diffusion on Eden trees, (+ R. Ramaswamy), *Phys. Rev. Lett.* **54** (1985) 1346.
4. Drift and trapping in biased diffusion on disordered lattices,(+ D. Stauffer), *Int. J. Modern Phys.* **C9** (1998) 349. [cond-mat 9802218].

H. Eden model, Surface growth and related models

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I. Other papers

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2. Entropy and phase transitions in partially ordered sets, J. Math. Phys. **19** (1978) 1711.
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5. Phase transition and dimensionality, in *Current Trends in Magnetism*, Eds. N. S. Satyamurthy and L. Madhav Rao (Indian Physics Association, Bombay, 1981).
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7. Susceptibility of the checkerboard Ising model, (+ J. M. Maillard) J. Phys. **A18** (1985) L383.
8. A Monte-Carlo method for series expansion (+ P. M. Lam), J. Phys. **A19** (1986) L1057.
9. Travelling salesman problem on a randomly diluted lattice (+ M. Barma, B. K. Chakrabarti and A. Taraphder), J. Phys. **A20** (1987) 5289.
10. The Hausdorff dimension of Apollonian packing of circles, (P. B. Thomas +), J. Phys. **A27** (1994) 2257.
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14. Preserving quantum states: a super-Zeno effect, (+ L. K. Grover and S. M. Roy), Phys. Rev. Lett. **96**, 100405(2006). [quant-ph/0504070].
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16. On the orientational ordering of long rods on a lattice, (A. Ghosh + DD), Europhys. Lett. **78** (2007) 20003. [cond-mat/0611361]
17. Exact entropy of dimer coverings for a class of lattices in three or more dimensions, (+ S. Chandra), Phys. Rev. Lett., **100**, 120602 (2008). [arXiv:0711.3021]
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J. Books Edited

1. Dynamics of Complex Systems, Proceedings of a conference held at the S. N. Bose Centre for Basic Sciences, Calcutta (August 6-11,1996). Eds: S. Dattagupta, D. Dhar and S. Puri, Physica **A224** Nos.1-2, [North- Holland, Amsterdam, 1996].

K. Popular Articles, General Interest, Book Reviews, etc.

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7. Book review of 'The action principle in Physics', by R. V. Kamat, in Current Science, **69** (1995) no.4, p369.
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