

Publication list: Igor Herbut

Books

1. **I. Herbut**, *A Modern Approach to Critical Phenomena*, (Cambridge University Press, 2007).

Articles

1. **I. Herbut**, *Pseudo-magnetic catalysis of the time-reversal symmetry breaking in two dimensions*, preprint, [arXiv:0804.3594](https://arxiv.org/abs/0804.3594)
2. **I. Herbut and B. Roy**, *Quantum critical scaling in magnetic field near the Dirac point in graphene*, [Physical Review B](#) **77**, 245438 (2008)
3. **V. Juricic, I. Herbut, and Z. Tesanovic**, *Restoration of the magnetic hc/e -periodicity in unconventional superconductors*, [Physical Review Letters](#) **100**, 187006 (2008).
4. **I. Herbut, V. Juricic, and O. Vafek**, *Coulomb interactions, ripples, and the minimal conductivity of graphene*, [Physical Review Letters](#) **100**, 046403 (2008).
5. **I. Herbut**, *$SO(3)$ symmetry between Neel and ferromagnetic order parameters for graphene in magnetic field*, [Physical Review B](#) **76**, 085432 (2007)
6. **I. Herbut**, *Zero-energy states and fragmentation of electron spin in the easy-plane antiferromagnet on a honeycomb lattice*, [Physical Review Letters](#) **99**, 206404 (2007)
7. **B. Seradjeh and I. Herbut**, *Excitons in QED_3 and spin response in a phase-fluctuating d -wave superconductor*, [Physical Review B](#) **76**, 024503 (2007)
8. **I. Herbut**, *Theory of integer quantum Hall effect in graphene*, [Physical Review B](#) **75**, 165411 (2007)
9. **I. Herbut**, *Interactions and phase transitions on graphene's honeycomb lattice*, [Physical Review Letters](#) **97**, 146401 (2006)
10. **I. Herbut and M. Oshikawa**, *Stable skyrmions in spinor condensates*, [Physical Review Letters](#) **97**, 080403 (2006)
11. **M. Case and I. Herbut**, *Screening in anisotropic superfluids and the superfluid density in underdoped cuprates*, [Physical Review B](#) **72**, 104503 (2005)
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13. **I. Herbut**, *Effective theory of high-temperature superconductors*, Physical Review Letters **94**, 237001 (2005)
14. **I. Herbut**, *Quantum fluctuations, pseudogap, and the $T=0$ superfluid density in strongly correlated d -wave superconductors*, Physical Review B **70**, 184507 (2004)
15. **I. Herbut and M. Case**, *Finite temperature superfluid density in very underdoped cuprates*, Physical Review B **70**, 094516 (2004)
16. **I. Herbut**, *Theory of strongly phase fluctuating d -wave superconductors and the spin response in underdoped cuprates*, Physica C **408-410**, 414 (2004)
17. **M. Case, B. Seradjeh, and I. Herbut**, *Self consistent theory of compact QED3 with relativistic fermions*, Nuclear Physics B **676**, 572 (2004)
18. **I. Herbut, B. Seradjeh, S. Sachdev, and G. Murthy**, *Absence of $U(1)$ spin liquids in two dimensions*, Physical Review B **68**, 195110 (2003)
19. **I. Herbut and B. Seradjeh**, *Permanent confinement in the compact QED3 with fermionic matter*, Physical Review Letters **91**, 171601 (2003)
20. **I. Herbut and D. Lee**, *Theory of spin response in underdoped cuprates as fluctuating d -wave superconductors*, Physical Review B **68**, 104518 (2003)
21. **D. Lee and I. Herbut**, *Quantum critical point in the QED3 theory of underdoped high temperature superconductors*, Physical Review B **67**, 174512 (2003)
22. **B. Seradjeh and I. Herbut**, *Fine structure of chiral symmetry breaking in the QED3 theory of high temperature superconductors*, Physical Review B **66**, 184507 (2002)
23. **D. Lee and I. Herbut**, *Velocity anisotropy and the antiferromagnetic instability in the QED3 theory of underdoped cuprates*, Physical Review B **66**, 094512 (2002)
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25. **M. Case and I. Herbut**, *Reply to comment on Large- N theory of strongly commensurate dirty bosons*, Journal of Physics A: Math and Gen. **35**, 2523 (2002)
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27. **I. Herbut**, *Quantum critical points with Coulomb interaction and the dynamical exponent: when and why $z=1$* , Physical Review Letters **87**, 137004 (2001)
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29. **W. Wu and I. Herbut**, *Superconducting zero temperature phase transition in two dimensions and in the magnetic field*, Physical Review B **64**, 184503 (2001)

30. **I. Herbut**, *The effect of parallel magnetic field on the Boltzmann conductivity and the Hall coefficient of a disordered two dimensional Fermi liquid*, Physical Review B **63**, 113102 (2001)
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32. **I. Herbut**, Comment on “*Localization and the mobility edge in one-dimensional potential with correlated disorder*”, arxiv.org/abs/cond-mat/0007266
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39. **I. Herbut**, *Dual theory of the superfluid - Bose glass transition in disordered Bose-Hubbard model in one and two dimensions*, Physical Review B **57**, 13729 (1998)
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41. **I. Herbut**, *Dual superfluid - Bose glass critical point in two dimensions and the universal conductivity*, Physical Review Letters **79**, 3502 (1997)
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43. **I. Herbut**, *Continuum dual theory of the transition in 3D lattice superconductor*, Journal of Physics A: Math. and Gen. **30**, 423 (1997)
44. **I. Herbut and Z. Tesanovic**, Reply to comment on *Critical fluctuations in superconductors and magnetic field penetration depth*, Physical Review Letters **78**, 980 (1997)
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46. **I. Herbut and Z. Tesanovic**, Comment on *Theory of continuous H_{c2} normal to superconducting transition*, Physical Review Letters **76**, 4450 (1996)
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57. **Z. Tesanovic and I. Herbut**, *Superlattice of 2d electrons in the fractional quantum Hall effect regime - the effects of tunnelling between layers*, Journal of Physics: Condensed Matter **3**, 9975 (1991)
58. **I. Herbut and S. Milosevic**, *Hopping on hierarchical structures and random walking on deterministic fractals*, Journal of Physics A: Math. and Gen. **23**, 99 (1990)
59. **I. Herbut and S. Milosevic**, *On the magnetic analogy of the de Gennes ant in a labyrinth*, Journal of Physics A: Math. and Gen. **22**, 5171 (1989)