

Publication activity — Václav Janiš

January 9, 2023

A Original research papers

A.1 Papers in impacted international research journals

A.2 Papers in local research journals

A.3 Papers in proceeding of international research conferences

A.4 Papers in proceedings of national research conferences

B Book chapters

C Preprints

D Articles in Czech

E Dissertations

A Original research papers

A.1 Papers in impacted international research journals

- A.1.89 V. Janiš and J. Yan, *Failure of the mean-field description of magnetic fluctuations in the superconducting quantum dot*, *AIP Advances* **12**, 035139 (2022) 1-6.
- A.1.88 J. Yan and V. Janiš, *Single-impurity Anderson model out of equilibrium: A two-particle semianalytic approach*, *Phys. Rev. B* **105**, 085122 (2022) 1-15.
- A.1.87 V. Janiš and J. Yan, *Many-body perturbation theory for the superconducting quantum dot: Fundamental role of the magnetic field*, *Phys. Rev. B* **103**, 235163 (2021) 1-18.
- A.1.86 V. Janiš, A. Klíč, and J. Yan, *Antiferromagnetic fluctuations in the one-dimensional Hubbard model*, *AIP Advances* **10**, 125127 (2020) 1-6.
- A.1.85 V. Janiš, A. Klíč, J. Yan, and V. Pokorný, *Curie-Weiss susceptibility in strongly correlated electron systems*, *Phys. Rev. B* **102**, 205120 (2020) 1-13.
- A.1.84 V. Janiš, P. Zalom, V. Pokorný, and A. Klíč, *Strongly correlated electrons: Analytic mean-field theories with two-particle self-consistency*, *Phys. Rev. B* **100**, 195114 (2019) 1-14.
- A.1.83 P. Zalom, V. Pokorný, and V. Janiš, *Symmetric Anderson impurity model: Magnetic susceptibility, specific heat and Wilson ratio*, *Physica B* **536** (2018) 704-7.
- A.1.82 V. Pokorný, M. Žonda, A. Kauch, and V. Janiš, *Simplified Parquet Equations for the Anderson Impurity Model: Comparison with Numerically Exact Solutions*, *Acta Phys. Polon. A* **131** (2017) 1042-4.

- A.1.81 V. Janiš, V. Pokorný, and A. Kauch *Mean-field approximation for thermodynamic and spectral functions of correlated electrons: Strong coupling and arbitrary band filling*, *Phys. Rev. B* **95**, 165113 (2017) 1-12.
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- A.1.77 V. Janiš and J. Kolorenč, *Conserving approximations for response functions of the Fermi gas in a random potential*, *Eur. Phys. J. B* **89**, 170 (2016) 1-12.
- A.1.76 M. Žonda, V. Pokorný, V. Janiš, and T. Novotný, *Perturbation theory for an Anderson quantum dot asymmetrically attached to two superconducting leads*, *Phys. Rev. B* **93**, 024523 (2016) 1-18.
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- A.1.73 V. Janiš and V. Pokorný, *Vertices for correlated electron systems with anomalous propagators*, *Science Letters Journal* **3**:66 (2014) 1-10.
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- A.1.67 V. Janiš and A. Klíč, *Mean-field solution of the Potts glass near the transition temperature to the ordered phase*, *Phys. Rev. B* **84**, 064446 (2011) 1-10.
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- A.1.61 V. Janiš, *Integrability of the diffusion pole in the diagrammatic description of noninteracting electrons in a random potential*, *J. Phys.: Condens. Matter* **21**, 485501 (2009) 1-8.
- A.1.60 V. Janiš and M. Ringel, *Magnetic properties of metallic impurities with strongly correlated electrons*, *Acta Phys. Polon. A* **115** (2009) 30-36.
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- A.1.35 V. Janiš, G. Czycholl, *Fluctuation-driven insulator-to-metal transition in an external magnetic field*, *Phys. Rev. B* **61** (2000) 9875-8.
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- A.1.33 V. Janiš, *Stability of self-consistent solutions for the Hubbard model at intermediate and strong coupling*, *Phys. Rev. B* **60** (1999) 11345-60.
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- A.1.19 V. Janiš, M. Ulmke and D. Vollhardt, *Disorder vs. interaction in the Hubbard model: Phase diagram in infinite dimensions*, *Europhysics Letters* **24** (1993) 287-92.
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- A.1.6 V. Janiš, *Diagrammatic expansion and metastability in the random-field Ising model*, **J. Stat. Phys.** **47** (1987) 931-8.
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A.2 Papers in local research journals

- A.2.6 V. Janiš and R. Teplý *The role of two-particle correlations in strongly interacting electron systems*, **Czech. J. Phys. B** **46** (1996) 2 633-4.
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- A.2.2 V. Janiš, *Renormalized expansions for functional integrals: Generalized coherent-potential approximation*, **Czech. J. Phys. B** **36** (1986) 1 107-29.
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A.3 Papers in proceeding of international research conferences

- A.3.15 V. Janiš and A. Klíč, *Kondo Temperature and High to Low Temperature Crossover in Impurity Models of Correlated Electrons* International Conference on Strongly Correlated Electron Systems (SCES2019), **JPS Conference Proceedings** **30** 011124 (2020).

- A.3.14 V. Janiš and V. Pokorný, *Quantum transport in strongly disordered crystals: Electrical conductivity with large negative vertex corrections*, in 26th International Conference on Low Temperature Physics , *J. Phys.: Conf. Series* **400**, 042023 (2012).
- A.3.13 V. Pokorný and V. Janiš, *Conductivity of the disordered Anderson model*, in LECTURES ON THE PHYSICS OF STRONGLY CORRELATED SYSTEMS XVI , *AIP Conference Proceedings Volume 1485*, (F. Mancini and A. Avella eds.) 2012, pp. 307-11.
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- A.3.4 V. Janiš, *Parquet diagrams in the critical region of the Mott metal-insulator transition*. In Recent Progress in Many-Body Theories, (D. Neilson and R. F. Bishop eds.), World Scientific, Singapore 1998, pp 489-92.
- A.3.3 V. Janiš, M. Ulmke, and D. Vollhardt, *The Hubbard model with local disorder in $d = \infty$* . In The Hubbard model, (D. Baeriswyl et al eds.), Plenum Press, New York, 1995, pp. 167-174.
- A.3.2 V. Janiš, *A functional-integral generalization of the coherent-potential approximation*. In Path Summation: Achievements and Goals, (S. Lundquist, A. Ranfagni, V. Sa-yakanit, and L. S. Schulman eds.) World Scientific, Singapore 1988, pp. 307-26.
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A.4 Papers in proceedings of national research conferences

- A.4.3 V. Pokorný and V. Janiš, *Vertex Corrections to the Electrical Conductivity of the Disordered Falicov-Kimball Model*, Proceedings of the 19th Annual Conference of Doctoral Students - WDS 2010, eds. J. Šafránková and J. Pavlu, (Matfyzpress, Prague 2010), pp. 134-7.
- A.4.2 V. Janiš, *Strongly correlated electrons - New methods for investigating quantum critical phenomena*, Proceedings of the 14th Conference of Czechoslovak Physicists, eds. P. Baroch, M. Kubásek and Š. Potocký (University of West Bohemia, Plzeň 2002), pp. 113-1 24.
- A.4.1 V. Janiš, *Mean-field theory of spin glasses*. Proceedings of the 9th Conference of Czechoslovak physicists, Pardubice 1987, pp. 291-4.

B Book chapters

- B.0.3 V. Janiš, *Green Functions in the Renormalized Many-Body Perturbation Theory*, Chap. 7 in Lecture Notes of the Autumn School on Correlated Electrons: Simulating Correlations with Computers (E. Pavarini and E. Koch eds.), [Verlag des Forschungszentrums Jülich, Reihe Modeling and Simulation, Vol. 11](#), Jülich 2021, ISBN 978-3-95806-529-1.
- B.0.2 V. Janiš, *Dynamical Mean-Field Theory of Disordered Electrons: Coherent Potential Approximation and Beyond*, Chap. 11 in Lecture Notes of the Autumn School on Correlated Electrons: The Physics of Correlated Insulators, Metals, and Superconductors (E. Pavarini, E. Koch, Richard Scalettar, and Richard Martin eds.), [Schriften des Forschungszentrums Jülich, Reihe Modeling and Simulation, Vol. 7](#), Jülich 2017, ISBN:978-3-95806-224-5.
- B.0.1 V. Janiš, *Introduction to Mean-Field Theory of Spin Glass Models*, Chap. 8 in Lecture Notes of the Autumn School on Correlated Electrons: Many-Body Physics: From Kondo to Hubbard (E. Pavarini, E. Koch and P. Coleman eds.), [Schriften des Forschungszentrums Jülich, Reihe Modeling and Simulation, Vol. 5](#), Jülich 2015, ISBN:978-3-95806-074-6.

C Preprints

- C.0.5 V. Janiš and J. Kolorenč, *Absence of the diffusion pole in the Anderson insulator*, e-print [cond-mat/0407618](#).
- C.0.4 V. Janiš, *Generating functional for the full parquet approximation*, e-print [cond-mat/9806118](#).
- C.0.3 V. Janiš, *Towards analytic description of a transition from weak to strong coupling regime in correlated electron systems: Systematic diagrammatic theory with two-particle Green functions*. e-print [cond-mat/9704076](#).
- C.0.2 V. Janiš, *Complete Wiener-Hopf solution solution of the x-rayedge problem*. Preprint ISSP (Tokyo) A3146 and e-print [cond-mat/9606071](#).
- C.0.1 V. Janiš, *Functional integral in quantum theory*. (in Czech) Preprint, Institute of Physics CSAV **84-4**.

D Articles in Czech

- D.0.6 V. Janiš, *Nobel Prize in Physics 2021 – Giorgio Parisi*, Pokroky matematiky, fyziky a astronomie **67** (2022) 17-23.
- D.0.5 V. Janiš, *Complexity and disorder in physical systems from atomic to planetary scales*, Československý časopis pro fyziku (Czech. J. Phys. A) **72** (2022) 14-20.
- D.0.4 V. Janiš, *Cooperative behaviour of interacting electrons and macroscopic quantum coherence in metals*, Czech. J. Phys. **A57** (2007) 298-308.
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E Dissertations

- E.0.3 *Self-Consistent and Nonperturbative Approximations for Correlated Electrons*, habilitation thesis, Charles University, Prague 2000. Commented collection of related published papers.
- E.0.2 *The Limit of High Spatial Dimensions as a Means for the Construction of Comprehensive Mean-Field Theories*, DSc thesis, Charles University, Prague 1995. Appendix contains reprinted selected published papers of the author.
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