

List of Peer-reviewed Publications

Total Publications: 141

Google Scholar Database:

Total Citations: 19,560

Hirsch Index: $h=53$

Papers cited more than 1,000 times: 4

Papers cited more than 100 times: 32

10h-index (papers cited more than 10 times): = 100

Thomson Reuters ISI Web of Knowledge Database:

Total Citations: 13,011

Citing Articles: 8,195

Hirsch Index: $h=47$

Average Citations per Article: 102

Including: 4 papers in Nature; 6 papers in Proc. Natl. Acad. Sci. USA; 7 papers in Physical Review Letters; 11 papers in EPL (Europhysics Letters); 18 papers in Physical Review E; 17 papers in Physica A; 5 papers in European Physical Journal B; papers in Science Advances, New Journal of Physics, Physical Review B, Chaos, Plos One, IEEE-Transactions of Biomedical Engineering, Circulation, American Journal of Physiology, Neuroscience, Frontiers in Neural Circuits, Psychophysiology, Sleep, etc.; 9 book chapters and 1 edited book.

1. Gochev I, Ivanov NB, Ivanov PCh. A new approach to calculation of energy of $s=1/2$ Heisenberg antiferromagnet using variational Gutzwiller wave function.
Int. J. Mod. Phys. B 1988; 1:1037–1042.
2. Gochev I, Ivanov PCh. On the trial wave functions in the theory of low-dimensional antiferromagnets. **Proceedings of the International Conference on Strongly correlated electron systems**. 1989; 464-470; Dubna, USSR.
3. Chubukov AV, Ivanova KI, Ivanov PCh, Korutcheva ER. Quantum ferrimagnets.
Journal of Physics: Condensed Matter 1991; 3:2665–2677. [20 citations]
4. Ivanov NB and Ivanov PCh. Frustrated two-dimensional quantum Heisenberg antiferromagnet at low temperatures.
Physical Review B 1992; 46:8206-8213. [33 citations]
5. Makse HA, Davies GW, Havlin S, Ivanov PCh, King P, Stanley HE. Long-range correlations in permeability fluctuations in porous rock.
Physical Review E 1996; 54:3129–3134. [35 citations]

6. Makse HA, Havlin S, Ivanov PCh, King P, Prakash S, Stanley HE. Pattern formation in sedimentary rocks: connectivity, permeability and spatial correlations.
Physica A 1996; 233:587–605. [33 citations]
7. Ivanov PCh, Rosenblum MG, Peng C-K, Mietus J, Havlin S, Stanley HE, Goldberger AL. Scaling behaviour of heartbeat intervals obtained by wavelet-based time-series analysis.
Nature 1996; 383:323–327. [550 citations]
8. Havlin S, Buldyrev SV, Goldberger AL, Ivanov PCh, Peng C-K, Stanley HE, Viswanathan GM. Scaling properties of DNA sequences and heartbeat rate. In “The Physics of Complex Systems”, edited by Mallamace F, Stanley HE.
Proceedings of the International School of Physics “Enrico Fermi” Course CXXXIV; Amsterdam: IOS Press; 1997. p. 445–472. [3 citations]
9. Ivanov PCh, Rosenblum MG, Peng C-K, Mietus J, Havlin S, Stanley HE, Goldberger AL. Scaling and universality in heart rate variability distributions.
Physica A 1998; 249:587–593. [95 citations]
10. Ivanov PCh, Amaral LAN, Goldberger AL, Stanley HE. Stochastic feedback and the regulation of biological rhythms.
EPL (Europhysics Letters) 1998; 43:363–368. [191 citations]
11. Amaral LAN, Goldberger AL, Ivanov PCh, Stanley HE. Scale-independent measures and pathologic cardiac dynamics.
Physical Review Letters 1998; 81:2388–2391. [173 citations]
12. Amaral LAN, Goldberger AL, Ivanov PCh, Stanley HE. “Modeling heart rate variability by stochastic feedback”.
Comp. Phys. Comm. 1999; 121: 126-128. [33 citations]
13. Ivanov PCh, Rosenblum MG, Amaral LAN, Struzik ZR, Havlin S, Goldberger AL, Stanley HE. Multifractality in human heartbeat dynamics.
Nature 1999; 399:461–465. [1,547 citations]
14. Stanley HE, Amaral LAN, Goldberger AL, Havlin S, Ivanov PCh, Peng C-K. Statistical physics in physiology: monofractal and multifractal approaches.
Physica A 1999; 270:309-324. [343 citations]
15. Ivanov PCh, Bunde A, Amaral LAN, Havlin S, Fritsch-Yelle J, R.M. Baevsky, Stanley HE, Goldberger AL. Sleep-wake differences in scaling behavior of the human heartbeat: analysis of terrestrial and long-term space flight data.
EPL (Europhysics Letters) 1999; 48:594-600. [235 citations]
16. Havlin S, Buldyrev SV, Bunde A, Goldberger AL, Ivanov PCh, Peng C-K, Stanley HE. Scaling in nature: from DNA through heartbeats to weather.
Physica A 1999; 273:46-69. [88 citations]
17. Havlin S, Amaral LAN, Ashkenazy Y, Goldberger AL, Ivanov PCh, Peng C-K, Stanley HE. Application of statistical physics to heartbeat diagnosis.

Physica A 1999; 274:99-110. [126 citations]

18. Amaral LAN, Ivanov PCh, Havlin S, Goldberger AL, Stanley HE. Multifractalidade do ritmo cardiaco. **Gazeta de Fisica** (Sociedade Portuguesa de Fisica) 1999; 22:5-9.
19. Ashkenazy Y, Ivanov PCh, Havlin S, Peng C-K, Yamamoto Y, Goldberger AL, Stanley HE. Decomposition of heartbeat time series: scaling analysis of the sign sequence. **Computers in Cardiology** 2000; 27:139-142. [34 citations]
20. Stanley HE, Amaral LAN, Gopikrishnan P, Ivanov PCh, Keitt TH, Plerou V. Scale invariance and universality: organizing principles in complex systems **Physica A** 2000; 281:60-68. [122 citations]
21. Schulte-Frohlinde V, Ashkenazy Y, Ivanov PCh, Morley-Davies A, Glass L, Goldberger AL, and Stanley HE. Finding hidden patterns in complex ventricular ectopy. **Computers in Cardiology** 2000; 27:335-338. [1 citations]
22. Stanley HE, Amaral LAN, Goldberger AL, Havlin S, Ivanov PCh, Peng C-K. Monofractal and multifractal approaches to complex biomedical signals. In “Stochastic and Chaotic Dynamics in the Lakes”, edited by Broomhead DS, Luchinskaya EA, McClintock PVE, Mullin T. **Proc. Int’l “Stochaos” Workshop; Ambleside, Cumbria, UK**. American Institute of Physics [AIP Conf. Proc. 502]; New York: Melville; 2000. p. 133–145. [1 citations]
23. Ivanov PCh, Amaral LAN, Goldberger AL, Havlin S, Rosenblum MG, Struzik Z, Stanley HE. Beyond 1/f: multifractality in human heartbeat dynamics. In “Unsolved Problems of Noise and Fluctuations”, edited by Abbott D and Kish LB. **UPoN’99: Second International Conference, Adelaide, Australia**. American Institute of Physics [AIP Conf. Proc. 511. New York: Melville; 2000; p. 273–281.
24. Goldberger AL, Amaral LAN, Glass L, Hausdorff JM, Ivanov PCh, Mark RG, Mietus JE, Moody GB, Peng C-K, Stanley HE. PhysioBank, PhysioToolkit, and PhysioNet: components of a new research resource for complex physiologic signals. **Circulation** 2000; 101:e215. [5,710 citations]
25. Podobnik B, Ivanov PCh, Lee Y, Chessa A, Stanley HE. Systems with correlations in the variance: generating power-law tails in probability distributions. **EPL (Europhysics Letters)** 2000; 50(6):711-717. [59 citations]
26. Ballora M, Pennycook B, Ivanov PCh, Goldberger AL, Glass L. Detection of obstructive sleep apnea through auditory display of heart rate variability. **Computers in Cardiology** 2000; 27:739-740 [20 citations]
27. B. Podobnik, Ivanov PCh, Lee Y, and Stanley HE. Scale-invariant truncated Lévy process. **EPL (Europhysics Letters)** 2000; 52:491-497. [56 citations]
28. Mietus JE, Peng C-K, Ivanov PCh, Goldberger AL. Detection of obstructive sleep apnea from cardiac interbeat interval time series. **Computers in Cardiology** 2000; 27:753-756 [120 citations]

29. Ashkenazy Y, Ivanov PCh, Havlin S, Peng C-K, Goldberger AL, Stanley HE. Magnitude and sign correlations in heartbeat fluctuations.
Physical Review Letters 2001; 86(9):1900–1903. [392 citations]
30. Hu K, Ivanov PCh, Chen Z, Carpena P, Stanley HE. Effect of trends on detrended fluctuation analysis.
Physical Review E 2001; 64(1):011114(19). [1,154 citations]
31. Amaral LAN, Ivanov PCh, Aoyagi N, Hidaka I, Tomono S, Goldberger AL, Stanley HE, Yamamoto Y. Behavioral-independent features of complex heartbeat dynamics.
Physical Review Letters 2001; 86(26):6026–6029. [250 citations]
32. Ivanov PCh, Podobnik B, Lee Y, and Stanley HE, Truncated Lévy process with scale-invariant behavior
Physica A 2001; 299(1-2):154–160. [25 citations]
33. Schulte-Frohlinde V, Ashkenazy Y, Ivanov PCh, Glass L, Goldberger AL, Stanley HE. Noise effects on the complex patterns of abnormal heartbeats.
Physical Review Letters 2001; 87(6):068104(4). [56 citations]
34. Ivanov PCh, Amaral LAN, Goldberger AL, Havlin S, Rosenblum MG, Stanley HE, Struzik Z, From $1/f$ Noise to Multifractal Cascades in Heartbeat Dynamics.
Chaos 2001; 11(3):641-652. [336 citations]
35. Bernaola-Galvan P, Ivanov PCh, Amaral LAN, Stanley HE. Scale Invariance in the Nonstationarity of Human Heart Rate.
Physical Review Letters 2001; 87(16):168105(4). [216 citations]
36. Ivanov PCh, Podobnik B, Lee Y, Chessa A, Stanley HE. Generating power-law tails in probability distributions. “**Modeling Complex Systems: Sixth Granada Lectures on Computational Physics**”, edited by Garrido PL and Marro J.
American Institute of Physics [AIP Conf. Proc. 574]. New York: Melville; 2001; p. 95-101.
37. Podobnik B, Matia K, Chessa A, Ivanov PCh, Lee Y, Stanley HE. Time evolution of stochastic processes with correlations in the variance: stability in power-law tails of distributions.
Physica A 2001; 300(1-2):300-309. [27 citations]
38. Hausdorff JM, Ashkenazy Y, Peng C-K, Ivanov PCh, Stanley HE, Goldberger AL. When human walking becomes random walking: fractal analysis and modeling of gait rhythm fluctuations.
Physica A 2001; 302(1-4):138-147. [207 citations]
39. Goldberger AL, Amaral LAN, Hausdorff JM, Ivanov PCh, Peng C-K, Stanley HE. Fractal dynamics in physiology: alterations with disease and aging.
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40. Ivanov PCh, Bernaola-Galvan P, Amaral LAN, Stanley HE. Fractal Features in the Nonstationarity of Physiological Time Series. In “Emergent Nature”, edited by Novak MM.
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and Fractals in Nature; 2002 Mar 17-20; Granada, Spain. Singapore: World Scientific; 2002; p. 55-65.

41. Lo C-C, Amaral LAN, Havlin S, Ivanov PCh, Penzel T Peter J-H, Stanley HE. Dynamics of sleep-wake transitions during sleep.
EPL (Europhysics Letters) 2002; 57(5):625-631. [137 citations]
42. Chen Z, Ivanov PCh, Hu K, Stanley HE. Effect of nonstationarities on detrended fluctuation analysis.
Physical Review E 2002; 65(4):041107(15). [827 citations]
43. Kantelhardt JW, Ashkenazy Y, Ivanov PCh, Bunde A, Havlin S, Penzel T, Peter J-H, Stanley HE. Characterization of sleep stages by correlations in the magnitude and sign of heartbeat increments.
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44. Carpena P, Bernaola-Galván P, Ivanov PCh, Stanley HE. Metal-insulator transition in chains with correlated disorder.
Nature 2002; 418:955-959; and 2003; 421(6924):764-764. [236 citations]
45. Schulte-Frohlinde V, Ashkenazy Y, Goldberger AL, Ivanov PCh, Costa M, Morley-Davies A, Stanley HE, Glass L. Complex patterns of abnormal heartbeats.
Physical Review E 2002; 66(3):031901(12). [47 citations]
46. Karasik R, Sapir N, Ashkenazy Y, Ivanov PCh, Dvir I, Lavie P, Havlin S. Correlation differences in heartbeat fluctuations during rest and exercise.
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EPL (Europhysics Letters) 2003; 62(2):147-153. [41 citations]
49. Ivanov PCh, Ashkenazy Y, Kantelhardt JW, Stanley HE. Quantifying heartbeat dynamics by magnitude and sign correlations. In “Unsolved Problems of Noise and Fluctuations”, edited by Bezrukov SM. **UPoN 2002: Third International Conference, Washington, USA.** American Institute of Physics [AIP Conf. Proc. 665]. New York: Melville; 2003; p. 383–391. [2 citations]
50. Suki B, Alencar AM, Frey U, Ivanov PCh, Buldyrev SV, Majumdar A, Stanley HE, Dawson CA, Krenz GS, Mishima M. Fluctuations, noise and scaling in the cardiopulmonary system.
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51. Ivanov PCh, Carpena P, Bernaola-Galvan P, Stanley HE. Electronic delocalization in finite one-dimensional correlated-disordered Binary Solids. In “Unsolved Problems of Noise and Fluctuations”, edited by Bezrukov SM. **UPoN 2002: Third International Conference,**

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- 53. Chen Z, Ivanov PCh, Hu K, Stanley HE, Novak V. Synchronization patterns in cerebral blood flow and peripheral blood pressure under minor stroke. In “Noise in Complex Systems and Stochastic Dynamics”, editors Schimansky-Geier L, Abbott D, Neiman A, Van den Broeck C. **SPIE Proceedings 5114**, 2003; p. 498-506. [1 citation]
- 54. Ivanova K, Ackerman TP, Clothiaux EE, Ivanov PCh, Stanley HE, Ausloos M. Time correlations and 1/f behavior in backscattering radar reflectivity measurements from cirrus cloud ice fluctuations.
J. Geophys. Res. 2003; 108(D9):4268. [16 citations]
- 55. Ivanov PCh. Detection of hierarchies and complex networks in cerebral synchronization patterns. **Physica A** 2003; 330(1-2):296. [2 citations]
- 56. Hu K, Ivanov PCh, Chen Z, Hilton MF, Stanley HE, Shea SA. Novel multiscale regulation in human motor activity. In “Fluctuations and Noise in Biological, Biophysical, and Biomedical Systems”, edited by Bezrukov SM, Frauenfelder H, Moss F.
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- 57. Ballora M, Pennycook B, Ivanov PCh, Glass L, Goldberger AL. Heart rate sonification: a new approach to medical diagnosis.
Leonardo 2004; 37(1):41-46. [45 citations]
- 58. Jennings HD, Ivanov PCh, Martins AM, da Silva PC, Vishwanathan GM. Variance fluctuations in nonstationary time series: a comparative study of music genres.
Physica A 2004; 336(3-4):585-594. [70 citations]
- 59. Hu K, Ivanov PCh, Chen Z, Hilton MF, Stanley HE, Shea SA. Non-random fluctuations and multi-scale dynamics regulation of human activity.
Physica A 2004; 337(1-2):307-318. [92 citations]
- 60. Ivanov PCh, Yuen A, Podobnik B, Lee Y. Distributions and long-range correlations in the trading of US stocks.
Application of Econophysics 2004; 51-57
- 61. Ivanov PCh, Yuen A, Podobnik B, Lee Y. Common Scaling Patterns in Intertrade Times of U.S. Stocks.
Physical Review E 2004; 69(5):056107(7). [162 citations]
- 62. Angelini L, De Tommaso M, Guido M, Hu K, Ivanov PCh, Marinazzo D, Nardulli G, Nitti L, Pellicoro M, Pierro C, Stramaglia S. Steady-state visual evoked potentials and phase synchronization in migraine patients.
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66. Lo C-C, Chou T, Penzel T, Scammell T, Strecker RE, Stanley HE, and Ivanov PCh. Common scale-invariant patterns of sleep-wake transitions across mammalian species.
Proc. Natl. Acad. Sci. 2004; 101(52):17545–17548. [186 citations]
67. Podobnik B, Ivanov PCh, Grosse I, Matia K, Stanley HE. ARCH-GARCH approaches to modeling high-frequency financial data.
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68. Hu K, Ivanov PCh, Hilton MF, Chen Z, Ayers RT, Stanley HE, Shea SA. Endogenous circadian rhythm in an index of cardiac vulnerability independent of changes in behavior.(shared first authorship with K.Hu)
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69. Penzel T, Lo C-C, Ivanov PCh, Kesper K, Becker HF, Vogelmeier C. Analysis of sleep fragmentation and sleep structure in patients with sleep apnea and normal volunteers.
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76. Xu L, Chen Z, Hu K, Stanley HE, and Ivanov PCh. Spurious detection of phase synchronization in coupled nonlinear oscillators.
Physical Review E -Rapid Communications 2006; 73(6):065201(4). [46 citations]
77. Hu K, Scheer F, Ivanov PCh, Buijs RM, Shea SA. Intrinsic scale-invariant patterns of locomotor activity: Influence of the circadian pacemaker across a wide range of time scales - Spanning 4-24 hours.
Sleep 2006; 29:A64-A64 190 Suppl. S.
78. Hu K, Hilton MF, Ayers RT, Ivanov PCh, Shea SA. An endogenous circadian rhythm in an index of cardiac vulnerability confirmed with a constant routine protocol.
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79. Shao J, Ivanov PCh, Podobnik B, Stanley HE. Quantitative relations between corruption and economic factors.
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80. de la Casa MA, de la Rubia FJ, Ivanov PCh. Patterns of spiral wave attenuation by low-frequency periodic planar fronts.
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81. Schmitt DT, Ivanov PCh. Fractal scaling and nonlinear properties of cardiac dynamics remain stable with advanced age: A new mechanistic picture of cardiac control in healthy elderly.
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82. Podobnik B, Fu DF, Stanley HE, and Ivanov PCh. Power-law autocorrelated stochastic processes with long-range cross-correlations.
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IEEE Transactions on Biomedical Engineering 2009; 56(5):1564-1573. [63 citations]
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94. Podobnik B, Grosse I, Horvatic D, Ilic S, Ivanov PCh, Stanley HE. Quantifying cross-correlations using local and global detrending approaches.
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98. Ma QDY, Bartsch RP, Bernaola-Galván P, Yoneyama M, Ivanov PCh. Effects of extreme data loss on detrended fluctuation analysis.
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