

List of publications - Fotios K. Diakonos

1. M. Diakonou and F. Diakonos : The $K^-\pi^+\pi^+$ decay of the D^+ meson
Physics Letters B **216**, 436 (1989)
2. F. Diakonos, G. Katsilieris, O. Korakianitis and S.P. Vlassopoulos : Additional Z contributions to the accompanied dilepton cross section at e^+e^- colliders
Physics Letters B **260**, 219 (1991)
3. N.G. Antoniou, F. Diakonos and C.G. Papadopoulos : The phenomenology of the fractal pomeron
Physics Letters B **265**, 399 (1991)
4. E.N. Argyres, F. Diakonos, O. Korakianitis, C.G. Papadopoulos and W.J. Stirling : $W^+W^-\gamma$ production as a test of the standard model at LHC and SSC
Physics Letters B **272**, 431 (1991)
5. N.G. Antoniou, I.S. Mistakidis and F.K. Diakonos : On the origin of multidimensional intermittency
Physics Letters B **293**, 187 (1992)
6. N.G. Antoniou, V.E. Zambetakis, F.K. Diakonos and M.K. Diakonou : Fractality in rapidity space and low temperature intermittency in multi-hadron processes
Zeitschrift für Physik C **55**, 631 (1992)
7. F.K. Diakonos, O. Korakianitis, C.G. Papadopoulos, C. Philippides and W.J. Stirling : $W + \gamma$ +jet production as a test of the electromagnetic couplings of W at LHC and SSC
Physics Letters B **303**, 177 (1993)
8. N.G. Antoniou, F.K. Diakonos, C.G. Papadopoulos and P. Schmelcher : Hadronic intermittency and chaotic motion in rapidity space
Physical Review E **48**, 3399 (1993)
9. N.G. Antoniou, F.K. Diakonos, I.S. Mistakidis and C.G. Papadopoulos : Criticality, fractality, and intermittency in strong interactions
Physical Review D **49**, 5789 (1994)

10. N.G. Antoniou, F.K. Diakonos and I.S. Mistakidis : Dynamic scaling in hadronization and multidimensional intermittency
Physics Letters B **328**, 162 (1994)
11. C. Christou, F.K. Diakonos and H. Panagopoulos : Fractal behaviour in the $O(3)$ model
Physics Letters B **352**, 411 (1995)
12. N.G. Antoniou, C.N. Ktorides, I.S. Mistakidis and F.K. Diakonos : Intermittency in the N -component ϕ^4 theory
Physics Letters B **353**, 501 (1995)
13. C. Alexandrou and F.K. Diakonos : Non perturbative treatment of the N -body system with dynamical mesons
Zeitschrift für Physik A **353**, 149 (1995)
14. F.K. Diakonos and P. Schmelcher : On the construction of one-dimensional iterative maps from the invariant density : the dynamical route to the beta distribution
Physics Letters A **211**, 199 (1996)
15. N.G. Antoniou, C.N. Ktorides, I.S. Mistakidis and F.K. Diakonos : Chiral QCD Phase Transition in Nuclear Collisions
European Physical Journal C **4**, 513 (1998)
16. Christofides, C., Diakonos, F., Seas, A., Christou, C., *et. al.* : Two-layer model for photomodulated thermorelectance of semiconductor wafers
Journal of Applied Physics **80**, 1713 (1996)
17. F.K. Diakonos, P. Schmelcher : Turning point properties as a method for the characterization of the ergodic dynamics of one-dimensional iterative maps
Chaos **7**, 239 (1997)
18. P. Schmelcher, F.K. Diakonos : A turning point analysis of the ergodic dynamics of iterative maps
International Journal of Bifurcation and Chaos **7**, 2459 (1997)
19. P. Schmelcher, F.K. Diakonos : Detecting unstable periodic orbits in chaotic dynamical systems
Physical Review Letters **78**, 4733 (1997)

20. T. Detmer, P. Schmelcher, F.K. Diakonos and L.S. Cederbaum : The hydrogen molecule in weak to strong magnetic fields : The lowest Σ states of the parallel configuration
Physical Review A **56**, 1825 (1997)
21. P. Schmelcher, F.K. Diakonos : General approach to the localization of unstable periodic orbits in chaotic dynamical systems
Physical Review E **57**, 2739 (1998)
22. N.G. Antoniou, F.K. Diakonos, C.N. Ktorides and M. Lahanas : Critical events and Intermittency in nuclear collisions
Physics Letters B **432**, 8 (1998)
23. N.G. Antoniou, Y.F. Contoyiannis, F.K. Diakonos and C.G. Papadopoulos : Fractals at $T = T_c$ due to instantonlike configurations
Physical Review Letters **81**, 4289 (1998)
24. D. Baltas, S. Giannouli, A. Garbi, F. Diakonos, *et. al.* : Application of the Monte Carlo Integration (MCI) method for calculation of the anisotropy of ^{192}Ir brachytherapy sources
Physics in Medicine and Biology **43**, 1783 (1998)
25. F.K. Diakonos, P. Schmelcher and O. Biham : Systematic computation of the least unstable periodic orbits in chaotic attractors
Physical Review Letters **81**, 4349 (1998)
26. D. Pingel, P. Schmelcher and F.K. Diakonos : Analytical solutions to one-dimensional dissipative and discrete chaotic dynamics
Physical Review E **58**, 369 (1998)
27. D. Pingel, P. Schmelcher and F.K. Diakonos : Theory and examples to the inverse Frobenius-Perron problem for complete chaotic maps
Chaos **9**, 357 (1999)
28. W. Becken, P. Schmelcher and F.K. Diakonos : The helium atom in a strong magnetic field
Journal of Physics B **32**, 1557 (1999)
29. F.K. Diakonos, D. Pingel and P. Schmelcher : A stochastic approach to the construction of fully chaotic maps with prescribed statistical properties
Physics Letters A **264**, 162 (1999)

30. Y.F. Contoyiannis, F.K. Diakonos : Criticality and intermittency in the order parameter space
Physics Letters A **268**, 286 (2000)
31. D. Pingel, P. Schmelcher, F.K. Diakonos and O. Biham : Theory and applications of the systematic detection of unstable periodic orbits in dynamical systems
Physical Review E **62**, 2119 (2000)
32. N.G. Antoniou, Y.F. Contoyiannis and F.K. Diakonos : The fractal geometry of critical systems
Physical Review E **62**, 3125 (2000)
33. F.K. Diakonos, D. Pingel and P. Schmelcher : Analyzing Lyapunov spectra of chaotic dynamical systems
Physical Review E **62**, 4413 (2000)
34. N.G. Antoniou, Y.F. Contoyiannis, F.K. Diakonos, A.I. Karanikas and C.N. Ktorides : Pion production from a critical QCD phase
Nuclear Physics A **693**, 799 (2001)
35. P. Papachristou, F.K. Diakonos, E. Mavrommatis and V. Constantoudis : Nonperiodic delay mechanism and fractal-like behaviour in time-dependent classical scattering
Physical Review E **64**, 016205 (2001)
36. D. Pingel, P. Schmelcher and F.K. Diakonos : Detecting unstable periodic orbits in chaotic continuous-time dynamical systems
Physical Review E **64**, 026214 (2001)
37. Y.F. Contoyiannis, F.K. Diakonos and A. Malakis : On the intermittent dynamics of critical fluctuations
Physical Review Letters **89**, 035701 (2002)
38. D.J. Frantzeskakis, G. Theocharis, F.K. Diakonos, P. Schmelcher and Y.S. Kivshar : Interaction of dark solitons with localized impurities in Bose-Einstein condensates
Physical Review A **66**, 053608 (2002)

39. A. Provata, G.A. Tsekouras, F.K. Diakonos, D.J. Frantzeskakis, F. Baras, A.V. Shabunin and V. Astakhov :
 Fluctuation-induced local oscillations and fractal patterns in the lattice limit cycle model
Fluctuations and Noise Letters **3**, L241 (2003)
40. P. Papachristou, F.K. Diakonos, V. Constantoudis, P. Schmelcher and L. Benet : Classical scattering from an oscillating target
Physics Letters A **306**, 116 (2002)
41. P. Drouvelis, P. Schmelcher and F.K. Diakonos : Two-electron anisotropic quantum dots
Europhysics Letters **64**, 232 (2003)
42. P. Drouvelis, P. Schmelcher and F.K. Diakonos : Global view on the electronic properties of two-electron anisotropic quantum dots
Physical Review B **69**, 035333 (2004)
43. P. Drouvelis, P. Schmelcher and F.K. Diakonos : Probing the shape of quantum dots with magnetic fields
Physical Review B **69**, 155312 (2004)
44. P. Drouvelis, P. Schmelcher and F.K. Diakonos : Effects of anisotropy and magnetic fields on two-electron parabolic quantum dots
Journal of Physics: Condensed Matter **16**, 36333 (2004)
45. P. Papachristou, F.K. Diakonos, V. Constantoudis, P. Schmelcher and L. Benet-Fernandez : Scattering off two oscillating disks: Dilute chaos
Physical Review E **70**, 129411 (2004)
46. A. Malakis and F.K. Diakonos : Universality aspects of self-organization models
Fractals **12**, 303 (2004)
47. Y.F. Contoyiannis, F.K. Diakonos, P.G. Kapiris, A.S. Peratzakis and K.A. Eftaxias : Intermittent Dynamics of Critical Pre-seismic Electromagnetic Fluctuations
Physics and Chemistry of the Earth **29**, 397 (2004)

48. Y.F. Contoyiannis, F.K. Diakonos, C. Papaefthimiou and G. Theophilidis : Criticality in the Relaxation Phase of a Spontaneously Contracting Atria Isolated from a Frog's Heart
Physical Review Letters **93**, 098101 (2004)
49. D. Pingel, P. Schmelcher and F.K. Diakonos : Stability transformation: a tool to solve nonlinear problems
Physics Reports **400**, 67 (2004)
50. F.K. Diakonos, E.N. Saridakis and N. Tetradis: Energy from the Bulk through Parametric Resonance
Physics Letters B **605**, 1 (2005)
51. N.G. Antoniou, Y.F. Contoyiannis, F.K. Diakonos and G. Mavromanolakis : Critical QCD in nuclear collisions
Nuclear Physics A **761**, 149 (2005)
52. N.G. Antoniou, F.K. Diakonos and A.S. Kapoyannis: The critical endpoint of bootstrap and lattice QCD matter
Nuclear Physics A **759**, 417 (2005)
53. N.G. Fytas, F.K. Diakonos, P. Schmelcher, M. Scheid, A. Lassl, K. Richter and G. Fagas: Magnetic-field dependence of transport in normal and Andreev billiards: A classical interpretation of the averaged quantum behavior
Physical Review B **72**, 085336 (2005)
54. P. Papachristou, E. Mavrommatis, V. Contantoudis, F.K. Diakonos and J. Wambach: Lyapunov instability versus relaxation time in two-coupled oscillators
Physical Review E **73**, 016204 (2006)
55. F.K. Diakonos, G.D. Galanopoulos and X.N. Maintas: Bound state effects in transverse momentum parton distributions
Physical Review D **73**, 034007 (2006)
56. Y.F. Contoyiannis and F.K. Diakonos: Abrupt transition in a sandpile model
Physical Review E **73**, 031303 (2006)

57. N.G. Antoniou, F.K. Diakonos, A.S. Kapoyannis and K.S. Kousouris: Critical opalescence in baryonic QCD matter
Physical Review Letters **97**, 032002 (2006)
58. A.K. Karlis, P.K. Papachristou, F.K. Diakonos, V. Constantoudis and P. Schmelcher: Hyperacceleration in a stochastic Fermi-Ulam model
Physical Review Letters **97**, 194102 (2006)
59. N.G. Antoniou, F.K. Diakonos, E.N. Saridakis and G.A. Tsolias: The critical ensemble: an efficient simulation of a macroscopic system at the critical point
Physica A **376**, 308 (2007)
60. P.G. Kevrekidis, R. Carretero-González, D.J. Frantzeskakis, B.A. Malomed and F.K. Diakonos: Skyrmion-like states in two- and three-dimensional dynamical lattices
Physical Review E **75**, 026603 (2007)
61. N.G. Antoniou, F.K. Diakonos and E.N. Saridakis: Evolution of critical correlations at the QCD phase transition
Nuclear Physics A **784**, 536 (2007)
62. N.G. Antoniou, F.K. Diakonos, E.N. Saridakis and G.A. Tsolias: Classical evolution of fractal measures on the lattice
Physical Review E **75**, 041111 (2007)
63. F. Lenz, F.K. Diakonos and P. Schmelcher: Scattering dynamics of driven closed billiards
Europhysics Letters **79**, 20002 (2007)
64. A.K. Karlis, P.K. Papachristou, F.K. Diakonos, V. Constantoudis and P. Schmelcher: Fermi acceleration in the randomized driven Lorentz gas and the Fermi-Ulam model
Physical Review E **76**, 016214 (2007)
65. Y.F. Contoyiannis and F.K. Diakonos: Unimodal maps and order parameter fluctuations in the critical region
Physical Review E **76**, 031138 (2007)
66. F. Lenz, F.K. Diakonos and P. Schmelcher: Classical dynamics of the time-dependent elliptical billiard
Physical Review E **76**, 066213 (2007)

67. F. Lenz, F.K. Diakonos and P. Schmelcher: Tunable Fermi acceleration in the driven elliptical billiard
Physical Review Letters **100**, 014103 (2008)
68. P.K. Papachristou, E. Mavrommatis, V. Constantoudis, F.K. Diakonos and J. Wambach: A nonlinear classical model for the decay widths of Isoscalar Giant Monopole Resonances
Physical Review C **77**, 044305 (2008)
69. F.K. Diakonos, N.K. Kaplis and X.N. Maintas: MIT bag model inspired partonic transverse momentum distribution for prompt photon production in pp collisions
Physical Review D **78**, 054023 (2008)
70. A.K. Karlis, F.K. Diakonos, V. Constantoudis and P. Schmelcher: Rare events and their impact on velocity diffusion in a stochastic Fermi-Ulam model
Physical Review E **78**, 046213 (2008)
71. I. Brouzos, A.K. Karlis, C.A. Chrysanthakopoulos, F.K. Diakonos, V. Constantoudis, P. Schmelcher and L. Benet: Scattering off an oscillating target: Basic mechanisms and their impact on cross sections
Physical Review E **78**, 056207 (2008)
72. F.R.N. Koch, F. Lenz, C. Petri, F.K. Diakonos and P. Schmelcher: Dynamical trapping and chaotic scattering of the harmonically driven barrier
Physical Review E **78**, 056204 (2008)
73. N.G. Antoniou, F.K. Diakonos and E.N. Saridakis: Evolutionary intermittency signaling the universality class of the QCD critical point
Physical Review C **78**, 024908 (2008)
74. F.K. Diakonos and E.N. Saridakis: Statistical approach to the cosmological-constant problem on brane worlds
J. Cosmol. Astropart. Phys. **JCAP02**, 030 (2009)
75. F.K. Diakonos, N.K. Kaplis, X.N. Maintas: Partonic transverse momenta in non relativistic hypercentral quark potential models
European Physical Journal A **41**, 101 (2009)

76. F. Lenz, C. Petri, F.R.N. Koch, F.K. Diakonos and P. Schmelcher: Evolutionary phase space in driven elliptical billiards
New Journal of Physics **11**, 083035 (2009)
77. C. Petri, F. Lenz, F.K. Diakonos and P. Schmelcher: Directed transport and localization in phase-modulated driven lattices
Physical Review E **81**, 046219 (2010)
78. N.G. Antoniou, F.K. Diakonos and A.S. Kapoyannis: Indication for divergent baryon-number susceptibility in QCD matter
Physical Review C **81**, R011901 (2010)
79. C. Papadimitriou, K. Karamanos, F.K. Diakonos, V. Constantoudis and H. Papageorgiou: Entropy Analysis of Natural Language Written Texts
Physica A **389**, 3260 (2010)
80. N.G. Antoniou, F.K. Diakonos, G. Mavromanolakis and the NA49 Collaboration: Search for the QCD critical point in nuclear collisions at the CERN SPS
Physical Review C **81**, 064907 (2010)
81. F. Lenz, C. Petri, F.K. Diakonos and P. Schmelcher: Phase-space composition of driven elliptical billiards and its impact on Fermi acceleration
Physical Review E **82**, 016206 (2010)
82. M. Gärtner, F. Lenz, C. Petri, F.K. Diakonos and P. Schmelcher: Quantum scattering in driven single- and double-barrier systems
Physical Review E **81**, 051136 (2010)
83. C. Papadimitriou, K. Karamanos, F.K. Diakonos, V. Constantoudis and H. Papageorgiou: Entropy analysis of natural language written texts
Physica A **389**, 3260 (2010)
84. C. Petri, F. Lenz, F.K. Diakonos and P. Schmelcher: Particle focusing in oscillating dissipative billiards
Physical Review E **82**, R035204 (2010)

Submitted papers

1. E.K. Kosmides, Y.F. Contoyiannis, C. Papatheodoropoulos and F.K. Diakonos: Membrane potential noise is not that noisy

2. A.K. Karlis, V. Constantoudis, F.K. Diakonos and P. Schmelcher: The simplified stochastic Fermi-Ulam model revisited
3. X.N. Maintas, C.E. Tsagkarakis, F.K. Diakonos and D.J. Frantzeskakis Soliton-like solutions in massive Yang-Mills theory
4. V. Achilleos, G. Theocharis, P.G. Kevrekidis, F.K. Diakonos and D.J. Frantzeskakis: Identifying Nonlinear States from the Linear Limit in the DNLS Equation with Linear or Parabolic Potential

Conference Proceedings

1. N.G. Antoniou, F.K. Diakonos and I.S. Mistakidis : Multidimensional Intermittency S-Matrix approach to quark-hadron phase transition
Proceedings of the 4th Hellenic School in Elementary Particle Physics, Corfu (1992)
2. F.K. Diakonos, P. Schmelcher : The turning point dynamics and the organization of chaos in iterative maps
Presented in the International Conference:
Let us face Chaos through nonlinear dynamics, Maribor (1997), appeared in:
Nonlinear Phenomena in Complex Systems 3, 81 (2000)
3. T. Detmer, P. Schmelcher, F.K. Diakonos and L.S. Cederbaum : The hydrogen molecule in magnetic field on excited Σ states of the parallel configuration
Proceedings of the International Conference:
Atoms and Molecules in strong external fields, Bad Honnef (1997)
published by Plenum Pub. Company., New York, 1998
4. N.G. Antoniou, Y.F. Contoyiannis, F.K. Diakonos, C.N. Ktorides and M. Lahanas : Strangeness in Chiral QCD Phase Transition
Proceedings of the International Conference:
International Symposium on Strangeness in Quark Matter, Santorini (1997)
Journal of Physics G 23, 1953 (1997)

5. N.G. Antoniou, Y.F. Contoyiannis, F.K. Diakonos : Fractal clusters and Intermittency in Relativistic Heavy Ion Collisions
 Proceedings of the International Conference:
XXVIII International Symposium on Multiparticle Dynamics, Delfi (1998)
 published by World Scientific Pub. Company, Singapore, 2000
6. N.G. Antoniou, Y.F. Contoyiannis, F.K. Diakonos : Instantons and fractals in critical systems
 Proceedings of the International Conference:
Correlations and Fluctuations 1998, Budapest (1998)
 published by World Scientific Pub. Company (2000)
7. A. Malakis, C. Cousouris, F.K. Diakonos and O. Biham : Complex and critical behaviour of a sandpile model
 Proceedings of the International Conference:
Condensed Matter Theories 23, Ithaki (1999)
 published by Nuova Science Pub. Company (2001)
8. Y.F. Contoyiannis, F.K. Diakonos : The dynamical analogue of 3D critical systems at equilibrium
 Proceedings of the International Conference:
Condensed Matter Theories 23, Ithaki (1999)
 published by Nuova Science Pub. Company (2001)
9. N.G. Antoniou, Y.F. Contoyiannis and F.K. Diakonos : The critical point in QCD and pion fluctuations in heavy ion collisions
 Proceedings of the International Conference:
Quark Matter '99. International Conference on Ultra-Relativistic Nucleus-Nucleus Collisions, Turin (1999)
Nuclear Physics A **661**, 399c (1999)
10. N.G. Antoniou, Y.F. Contoyiannis and F.K. Diakonos : Probing the QCD critical point in nuclear collisions
 Proceedings of the International Conference:
XXIX International Symposium on Multiparticle Dynamics, Brown (1999)
 published by World Scientific Pub. Company, Singapore, 2000

11. F.K. Diakonos : Signatures of critical sigma-clusters in heavy ion collisions
 Proceedings of the International Conference:
9th International Workshop on Multiparticle Production, Torino (2000)
Nuclear Physics B 92, Proceedings Supplements, 33 (2001)
12. N.G. Antoniou, F.K. Diakonos and A.S. Kapoyannis: Net-baryon fluctuations at the QCD critical point
 Proceedings of the International Conference:
XXX International Symposium on Multiparticle Dynamics, Tihany (2000)
 published by World Scientific Pub. Company, Singapore, 2001
13. N.G. Antoniou, F.K. Diakonos and A.S. Kapoyannis: Critical fluctuations at RHIC
 Proceedings of the International Conference:
XXXI International Symposium on Multiparticle Dynamics, Datong (2001)
 published by World Scientific Pub. Company, Singapore, 2002
14. N.G. Antoniou, Y.F. Contoyiannis, F.K. Diakonos and A.S. Kapoyannis: Prospects of Detecting the QCD Critical Point
 Proceedings of the 10th International Workshop on Multiparticle Production:
Correlations and Fluctuations in QCD, Crete (2002)
 published by World Scientific Pub. Company, Singapore, 2003
15. N.G. Antoniou, F.K. Diakonos and A.S. Kapoyannis: Locating the QCD Critical Point in the Phase Diagram
 Proceedings of the 10th International Workshop on Multiparticle Production:
Correlations and Fluctuations in QCD, Crete (2002)
 published by World Scientific Pub. Company, Singapore, 2003
16. A.P. Contogouris, F.K. Diakonos and P.K. Papachristou: A Model for the Color Glass Condensate versus Jet Quenching
 Proceedings of the 10th International Workshop on Multiparticle Production:
Correlations and Fluctuations in QCD, Crete (2002)
 published by World Scientific Pub. Company, Singapore, 2003

17. N.G. Antoniou and F.K. Diakonos: Observational aspects of critical QCD
Proceedings of : *34th International Symposium on Multiparticle Dynamics*, California (2004)
published in **Acta Physica Polonica B****36**, 583 (2005)
18. F.K. Diakonos and N.G. Antoniou: Searching for the QCD critical point
in nuclear collisions
Proceedings of : *Critical Point and Onset of Deconfinement*, Florence
(2006)
published by Proceedings of Science (SISSA)
19. N.G. Antoniou, F.K. Diakonos, E.N. Saridakis and G.A. Tsolias: Classical
evolution of fractal measures generated by a scalar field on the lattice
International Journal of Modern Physics A **24**, 2317 (2009)