

Baruch Meerson - Curriculum Vitae

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Employment history:

Professor emeritus (since 2022).
Full Professor, Hebrew University of Jerusalem (1995-2022).
Chairman of the Racah Institute of Physics (2013-2015).
Chairman of Physics Studies, Hebrew University of Jerusalem (1996-1999).
Associate Professor, Hebrew University of Jerusalem (1991-1995).
Research Associate Professor, Hebrew University of Jerusalem (1988-1991).
Senior Researcher (1983-1987), Researcher (1975-1983), Institute of Applied Geophysics, the USSR State Committee on Hydrometeorology, Moscow.

Fellowships and Awards:

Outstanding Referee of the American Physical Society (2021).
The Chateaubriand Fellowship (2019).
The Rector's Prize for Excellence in Research and Teaching (2017).
Fellow of the American Physical Society (2012).
Visiting Scholar Fellowship from the University of Cologne through the Center of Excellence "Quantum Matter and Materials" (2016).
Louis and Ida Shlansky Chair in Physics (2015-2022).
Visiting Scholar Fellowship of the Department of Physics, Boston University (2012).
Michael Milken Award for Excellence in Teaching (2007).
Visiting Scholar Fellowship of the Michigan Center for Theoretical Physics, University of Michigan (2011, 2004-2005).
Visiting Scholar Fellowship of the Deutscher Akademischer Austauschdienst (DAAD), Germany (2001).
Visiting Scholar Fellowship of the Center of Excellence, Ministry of Education, Japan (1998).
Guastella Fellowship of the Israel Academy of Sciences (1991-1994).
Visiting Scholar Fellowship of the Royal Society of London (1991-1992).

Education:

Ph.D. in Physics, Institute of Physics of the Earth, the USSR Academy of Sciences, Moscow (1978).
M.Sc. in Physics, Kurchatov Institute of Atomic Energy and Moscow Institute for Physics and Technology (1975).

Present Research Interests:

Large fluctuations far from equilibrium

Past Research Interests:

Granular dynamics
Instabilities, pattern formation
Phase transition kinetics
Fluid dynamics and plasma theory

Nonlinear dynamics and chaos

Teaching experience:

Teaching at undergraduate and graduate levels at the Hebrew University of Jerusalem in 1988-2022.

Additional professional activities:

Member, Editorial Board, Physics Research International (2010-2015).

Organizer: Invited Session “Large Fluctuations Far from Equilibrium”, 2012 APS March Meeting, Boston MA.

Organizer: Mini-Symposium “Stochastic Population Dynamics: Large Fluctuations and Spatial Aspects”. International Conference “Models in Population Dynamics and Ecology 2010”, University of Leicester, September 2010.

Co-organizer: Workshop “Giant Fluctuations in Population Dynamics”, the Lorentz Center, Leiden, August 2009.

International Advisory Committee member: 10th Latin American Workshop on Nonlinear Phenomena 2007.

Reviewer for and/or panel chairman or panel member of funding agencies: Israel Science Foundation, US-Israel Binational Science Foundation, German-Israel Science Foundation, Israel Ministry of Science, Israel Atomic Energy Commission.

Reviewer for Physical Review Letters, Physical Review E, Physical Review B, Journal of Statistical Mechanics, Journal of Physics A, Physics of Plasmas, Physica D, Journal of Statistical Physics, Journal of Fluid Mechanics, The European Physical Journal B and other journals.

Co-founder of the Nonlinear Physics Seminar at the Hebrew University of Jerusalem.

Grants:

Israel Science Foundation: 1995-1998, 1999-2002, 2002-2005, 2005-2008, 2008-2013, 2016-2020, 2020-2024.

US-Israel Binational Science Foundation: 2009-2013, 2013-2017.

German-Israel Science Foundation: 2005-2007.

Israel Ministry of Science: 1991-1994.

Hebrew University grants in 1991, 1994, 1999, 2002 and 2003.

The Lorentz Center, Leiden, 2009: grant for workshop “Giant Fluctuations in Population Dynamics.”

Selected Media Features

1. Y. Gedi. What does granular flow have to do with expansion of a Universe? (in Hebrew). “HaTeva vEhaAretz” May 2005.

2. L. Zyga. Physicists show that correlated environmental variations can quicken extinctions. <http://www.physorg.com/news151059872.html>

3. With proper planning, selective rather than mass vaccination can provide immunity against flu, say physicists. ScienceDaily, <http://www.sciencedaily.com/releases/2011/01/110103110200.htm>

4. Can quantum mechanics conquer the common cold? Israel National News, <http://www.israelnationalnews.com/News/news.aspx/141504>

5. Interview to Israel Radio, Reshet Bet on Jan. 3, 2011,

6. Quantum mechanics in the service of vaccination? “Galileo”, a popular science magazine in Hebrew, No. 150, p. 52, Feb. 2011.

7. M. Khasin, M. Dykman, B. Meerson and M. Kriger. Targeted vaccination (in Hebrew), “Galileo” No. 165, p. 34, May 2012.

Baruch Meerson: Publications

While looking me up in databases please notice that in 1989 I dropped the second initial from my name.

1. Behavior of high-energy radiation-belt electrons during resonance interaction with geomagnetic pulsations. B.I. Meyerson (Meerson). *Geomagnetism and Aeronomy* **16**, 548-550 (1976).
2. Effects of bounce resonances on the wave growth rates in the magnetosphere. V.I. Karpman, B.I. Meerson, A.B. Mikhailovsky, and O.A. Pokhotelov. *Planet. Space Sci.* **25**, 573-585 (1977).
3. Microinstabilities due to fast ions in a high pressure plasma in a curved magnetic field. B.I. Meerson, A.B. Mikhailovsky, and O.A. Pokhotelov. *Plasma Phys.* **19**, 1177-1185 (1977).
4. Excitation of Alfvén waves by fast particles in a finite pressure plasma of adiabatic traps. B.I. Meerson, A.B. Mikhailovsky, and O.A. Pokhotelov. *J. Plasma Phys.* **2**, 137-148 (1978).
5. Self-consistent diffusion of trapped particles on bounce-drift resonance with geomagnetic pulsations. B.I. Meyerson (Meerson) and O.A. Pokhotelov. *Geomagnetism and Aeronomy* **18**, 79-82 (1978).
6. Nonlinear attenuation of geomagnetic pulsations on bounce resonances. B.I. Meyerson (Meerson) and P.V. Sasorov. *Geomagnetism and Aeronomy* **18**, 208-211 (1978).
7. Pulsations of type IV solar radio emission: the bounce-resonance effects. B.I. Meerson, P.V. Sasorov, and A.V. Stepanov. *Solar Phys.* **58**, 165-179 (1978).
8. Nonlinear bounce resonant interaction between Alfvén waves and geomagnetically trapped particles. B.I. Meerson and P.V. Sasorov. *Planet. Space Sci.* **27**, 503-509 (1979).
9. Stochastic instability of an oscillator and ionization of highly excited atoms under the action of electromagnetic radiation. B.I. Meerson, E.A. Oks, and P.V. Sasorov. *JETP Lett.* **29**, 72-75 (1979).
10. Nonlinear interaction of ion-cyclotron waves with fast protons in the magnetosphere. B.I. Meerson, P.V. Sasorov, and D.R. Shklyar. *Sov. J. Plasma Phys.* **5**, 620-625 (1979).
11. Nonlinear bounce-resonance interaction between MHD-waves and energetic particles. B.I. Meerson and P.V. Sasorov. In: *Studies in Geomagnetism, Aeronomy and Solar Physics*, vol. **48**, p. 145-157 (1979) (in Russian).
12. Nonlinear theory of the side-band (satellite) instability of the plasma waves. B.I. Meerson, P.V. Sasorov, and D.R. Shklyar. *Sov. J. Plasma Phys.* **6**, 591-594 (1980).
13. Highly excited atoms in an intense low frequency electromagnetic radiation field. B.I. Meerson and P.V. Sasorov. *Optics and Spectroscopy* **48**, 461-463 (1980).
14. Highly excited atoms under the influence of intense circularly polarized electromagnetic radiation. B.I. Meerson. *Optics and Spectroscopy* **51**, 322-325 (1981).
15. Solar flare proton release from coronal magnetic traps and strong Alfvén turbulence in the corona. B.I. Meerson and P. V. Sasorov. *Adv. Space Res.* **1**, 77-81 (1981).

16. Propagation of solitons in media with distributed sources of noise. B.I. Meerson. In: Proc. All-Union Conf. On Wave Diffraction and Propagation, Moscow, USSR vol. 2, p. 126-129 (1982) (in Russian).
17. A highly excited atom in a field of intense resonant electromagnetic radiation: 1. Classical motion. B.I. Meerson, E.A. Oks, and P.V. Sasorov. *J. Phys. B: At. Mol. Phys.* **15**, 3599-3614 (1982).
18. Dynamics of high-energy protons in the solar corona. B.I. Meerson, I.V. Rogachevskii, and P. V. Sasorov. In: "Dynamics of current sheets and physics of the solar activity", Zinatne publ., Riga, USSR, p.172-178 (1982) (in Russian).
19. On the storage of high-energy protons in the solar corona: the cyclotron instability. B.I. Meerson and I.V. Rogachevskii. *Solar Phys.* **87**, 337-357 (1983).
20. Resonance excitation of nonlinear dispersive waves. B.I. Meerson, P.V. Sasorov, and Yu.R. Vainberg. *Radiophys. and Quantum Electron.* **26** (1983), 1114-1119 (1984).
21. Thermal-mode stabilization of the resistive tearing instability of a current sheet. B.I. Meerson. *Sov. Astron. Lett.* **10**, 299-301 (1984).
22. The second All-Union Riga school on space physics (a review). B.I. Meerson. *Izv. Vuzov: Radiofizika* **27**, 985-986 (1984) (in Russian).
23. Kinetic theory of a steady-state double layer in a plasma. A.V. Gurevich, B.I. Meerson, and I.V. Rogachevskii. *Sov. J. Plasma Phys.* **11**, 693-699 (1985).
24. Instability of a radiating plasma with a current. B.I. Meerson. *Sov. J. Plasma Phys.* **12**, 122-124 (1986).
25. On the nonlinear theory of thermal instability. B.I. Meerson and P.V. Sasorov. *Sov. Phys. JETP* **65**, 300-304 (1987).
26. Ion-acoustic solitons and electron holes in a current carrying plasma. B.I. Meerson and I.V. Rogachevskii. *Sov. J. Plasma Phys.* **13**, 247-251 (1987).
27. On the resonant excitation of solitons by noise. B.I. Meerson, P.V. Sasorov, and Yu R. Vainberg. *Izv. Vuzov: Radiofizika* **31**, 754-756 (1988) (in Russian).
28. On the dynamics of strong temperature disturbances in the upper atmosphere of the Earth. B. Meerson. *Phys. Fluids A* **1**, 887-891 (1989).
29. The nonlinear theory of thermal instability: the intermediate- and short-wavelength limits. B. Meerson. *Astrophys. J.* **347**, 1012-1020 (1989).
30. Dynamics of highly excited atoms in a broadband noise electromagnetic field. B. Meerson. *Phys. Rev. Lett.* **62**, 1615-1618 (1989).
31. Strong autoresonance excitation of Rydberg atoms: the Rydberg accelerator. B. Meerson and L. Friedland. *Phys. Rev. A* **41**, 5233-5236 (1990).
32. "Unlimited" particle acceleration by an intense plasma wave with a varying phase velocity. B. Meerson. *Phys. Lett. A* **150**, 290-295 (1990).
33. Formation of streamers in plasma with an ion temperature gradient. A.M. Dimits, J.F. Drake, A.B. Hassam, and B. Meerson. *Phys. Fluids B* **2**, 2591-2599 (1990).

34. Long-time evolution of the nonlinear thermal instability: what phase survives. A.M. Dimits and B. Meerson. *Phys. Fluids B* **3**, 1420-1424 (1991).
35. Strong plasma wave excitation by a “chirped” laser beat wave. M. Deutsch, B. Meerson, and J.E. Golub. *Phys. Fluids B* **3**, 1773-1780 (1991).
36. A rigid rotator under slowly-varying kicks: dynamic autoresonance and time-varying chaos. B. Meerson and S. Yariv. *Phys. Rev. A* **44**, 3570-3582 (1991).
37. A mesoscopic linear accelerator driven by superintense sub-picosecond laser pulses. B. Meerson and T. Tajima. *Optics Comm.* **86**, 283-288 (1991).
38. Excitation of solitons by an external resonant wave with a slowly varying phase velocity. I. Aranson, B. Meerson, and T. Tajima. *Phys. Rev. A* **45**, 7500-7510 (1992).
39. On the nonlinear theory of the radiation-driven thermal instability of a magnetized plasma. B. Meerson, C.D.C. Steele, and E.R. Priest. *Geophys. Astrophys. Fluid Dynamics* **71**, 243-265 (1993).
40. Dynamic autoresonance and global chaos in a slowly varying system of two coupled oscillators. G. Cohen and B. Meerson. *Phys. Rev. E* **47**, 967-975 (1993).
41. Nonlinear diffusive interpenetration of a plasma and a magnetic field. J. Levin and B. Meerson. *Phys. Fluids B* **5**, 112-117 (1993).
42. Nonlinear radiative condensation instability and pattern formation: one-dimensional dynamics. I. Aranson, B. Meerson, and P. V. Sasorov. *Phys. Rev. E* **47**, 4337-4348 (1993).
43. On the nonlinear theory of the long-wavelength radiative condensation instability. B. Meerson, C.D.C. Steele, A.M. Milne, and E.R. Priest. *Phys. Fluids B* **5**, 3417-3431 (1993).
44. Multifaceted asymmetric radiation from the edge of tokamak plasmas: pattern formation under nonlocal constraints. B. Meerson, N. Petviashvili, and T. Tajima. *Phys. Plasmas* **2**, 414-417 (1995).
45. Front curvature effects in the dynamics of confined radiatively bistable plasmas: perfect patterns and Ostwald ripening. I. Aranson, B. Meerson, and P.V. Sasorov. *Phys. Rev. E* **52**, 948-971 (1995).
46. On the quasihydrostatic flows of radiatively cooling self-gravitating gas clouds. B. Meerson, E. Megged, and T. Tajima. *Astrophys. J.* **457**, 321-331 (1996).
47. Nonlinear dynamics of radiative condensations in optically thin plasmas. B. Meerson. *Rev. Mod. Phys.* **68**, 215-257 (1996).
48. On the cooling of the plasma fire ball produced by a laser spark in front of liquids and solids. D. Kaganovich, B. Meerson, A. Zigler, C. Cohen, and J. Levin. *Phys. Plasmas* **3**, 631-638 (1996).
49. Domain stability, competition, growth and selection in globally constrained bistable systems. B. Meerson and P.V. Sasorov. *Phys. Rev. E.* **53**, 3491-3494 (1996).
50. Topological singularities of domains in globally constrained bistable reaction-diffusion systems. B. Meerson and I. Mitkov. *Phys. Rev. E* **54**, 4644-4649 (1996).

51. Vorticity generation in slow cooling flows. A. Glasner, E. Livne and B. Meerson. *Phys. Rev. Lett.* **78**, 2112-2115 (1997).
52. “Chirped” Van der Pol oscillator. B. Meerson and G.I. Shinar. *Phys. Rev. E* **56**, 256-258 (1997).
53. Annular ballast resistor: symmetry breaking, pinning and coarsening in a globally-constrained reaction-diffusion system. B. Meerson and Y. Tsori. *Phys. Rev. E* **57**, 159-168 (1998).
54. Breakdown of scale invariance in the phase ordering of fractal clusters. M. Conti, B. Meerson, and P.V. Sasorov. *Phys. Rev. Lett.* **80**, 4693-4696 (1998).
55. Weak selection and stability of localized distributions in Ostwald ripening. B. Giron, B. Meerson, and P. V. Sasorov. *Phys. Rev. E* **58**, 4213-4216 (1998).
56. Size distribution and the Hausdorff-Besicovitch dimension of two-scale Cantor dust. A. Peleg and B. Meerson. *Phys. Rev. E* **59**, 1238-1241 (1999).
57. Fluctuations provide strong selection in Ostwald ripening. B. Meerson, *Phys. Rev. E* **60**, 3072-3075 (1999).
58. Logarithmically slow expansion of hot bubbles in gases. B. Meerson, P.V. Sasorov, and K. Sekimoto, *Phys. Rev. E* **61**, 1403-1406 (2000).
59. Dynamics of fractal dimension during phase ordering of a geometrical multifractal. A. Peleg and B. Meerson, *Phys. Rev. E* **62**, 1764-1769 (2000).
60. Area-preserving dynamics of a long slender finger by curvature: a test case for the globally conserved phase ordering. A. Peleg, B. Meerson, A. Vilenkin, and M. Conti, *Phys. Rev. E* **63**, 066101 1-7 (2001).
61. Normal scaling in globally conserved interface-controlled coarsening of fractal clusters. A. Peleg, M. Conti, and B. Meerson, *Phys. Rev. E* **64** 036127 1-6 (2001).
62. Parametric autoresonance. E. Khain and B. Meerson, *Phys. Rev. E* **64** 036619 1-8 (2001).
63. Symmetry-breaking instability and strongly peaked periodic clustering states in a driven granular gas. E. Livne, B. Meerson, and P.V. Sasorov, *Phys. Rev. E* **65**, 021302 1-6 (2002).
64. Generation of vorticity and turbulent cooling of “hot channels” in gases. Y. Kurzweil, E. Livne, and B. Meerson, *Phys. Fluids* **14**, 1030-1041 (2002).
65. Hydrodynamics of “thermal” granular convection. X. He, B. Meerson, and G. Doolen, *Phys. Rev. E* **65**, 030301 (Rapid Communication) 1-4 (2002).
66. Phase ordering with a global conservation law: Ostwald ripening and coalescence. M. Conti, B. Meerson, A. Peleg, and P.V. Sasorov, *Phys. Rev. E* **65**, 046117 1-13 (2002).
67. Anomalous dynamic scaling in locally-conserved coarsening of fractal clusters. A. Lipshtat, B. Meerson, and P.V. Sasorov, *Phys. Rev. E* **65**, 050501 (Rapid Communication) 1-4 (2002).
68. Phase separation and coarsening in electrostatically driven granular media. I.S. Aranson, B. Meerson, P.V. Sasorov, and V.M. Vinokur, *Phys. Rev. Lett.* **88**, 204301 1-4 (2002).

69. Symmetry-breaking instability in a prototypical driven granular gas. E. Khain and B. Meerson, *Phys. Rev. E* **66**, 021306 1-10 (2002).
70. Symmetry-breaking and coarsening of clusters in a prototypical driven granular gas. E. Livne, B. Meerson, and P.V. Sasorov, *Phys. Rev. E* **66**, 060301 (Rapid Communication) 1-4 (2002).
71. Onset of thermal convection in a horizontal layer of granular gas. E. Khain and B. Meerson, *Phys. Rev. E* **67**, 021306 1-6 (2003).
72. Vorticity production and turbulent cooling of “hot channels” in gases: three dimensions versus two dimensions. Y. Kurzweil, E. Livne, and B. Meerson, *Phys. Fluids* **15**, 752-762 (2003).
73. Development of a density inversion in driven granular gases. Y. Bromberg, E. Livne, and B. Meerson. *Invited paper*. In: “Granular Gas Dynamics”, ed. by T. Pöschel and N. Brilliantov, Vol. 624 of Lecture Notes in Physics, Springer (Berlin, Heidelberg, New York, 2003). p. 251-266; arXiv cond-mat/0305557.
74. Close-packed floating clusters: granular hydrodynamics beyond the freezing point? B. Meerson, T. Pöschel, and Y. Bromberg, *Phys. Rev. Lett.* **91**, 024301 1-4 (2003).
75. Oscillatory instability in a driven granular gas. E. Khain and B. Meerson, *Europhys. Lett.* **65**, 193-199 (2004).
76. Giant fluctuations at a granular phase separation threshold. B. Meerson, T. Pöschel, P.V. Sasorov, and T. Schwager, *Phys. Rev. E* **69**, 021302 1-9 (2004); *ibid* 059905 (E) (2004).
77. Scaling anomalies in the coarsening dynamics of fractal viscous fingering patterns. M. Conti, A. Lipshtat and B. Meerson, *Phys. Rev. E* **69**, 031406, 1-4 (2004).
78. Simulating coarsening dynamics of fractal clusters. A. Lipshtat, B. Meerson, and M. Conti, *Chaos* **14**, S13 (2004).
79. Phase diagram of van der Waals-like phase separation in a driven granular gas. E. Khain, B. Meerson, and P. V. Sasorov, *Phys. Rev. E* **70**, 051310, 1-13 (2004).
80. Far-from-equilibrium Ostwald ripening in electrostatically driven granular powders. M.V. Sapozhnikov, A. Peleg, B. Meerson, I.S. Aranson, and K.L. Kohlstedt, *Phys. Rev. E* **71**, 011307, 1-5 (2005).
81. Hydrodynamic singularities and clustering in a freely cooling inelastic gas. E. Efrati, E. Livne, and B. Meerson, *Phys. Rev. Lett.* **94**, 088001, 1-4 (2005).
82. Towards a continuum theory of clustering in a freely cooling inelastic gas. B. Meerson and A. Puglisi, *Europhys. Lett.* **70**, 478-484 (2005).
83. Parametric autoresonance in Faraday waves. M. Assaf and B. Meerson, *Phys. Rev. E* **72**, 016310, 1-13 (2005).
84. The role of discrete particle noise in the Ostwald ripening. B. Meerson, L.M. Sander, and P. Smereka, *Europhys. Lett.* **72**, 604-610 (2005).
85. Scaling and self-similarity in an unforced flow of inviscid fluid trapped inside a viscous fluid in a Hele-Shaw cell. A. Vilenkin, B. Meerson, and P.V. Sasorov, *Phys. Rev. Lett.* **96**, 044504, 1-4 (2006).

86. Experimental study of parametric autoresonance in Faraday waves. O. Ben-David, M. Assaf, J. Fineberg, and B. Meerson, *Phys. Rev. Lett.* **96**, 154503, 1-4 (2006).
87. Self-similar relaxation dynamics of a fluid wedge in a Hele-Shaw cell. O. Gat, B. Meerson, and A. Vilenkin, *Phys. Rev. E* **73**, 065302 (Rapid Communication) 1-4 (2006).
88. Shear-induced crystallization of a dense rapid granular flow: Hydrodynamics beyond the melting point. E. Khain and B. Meerson, *Phys. Rev. E* **73**, 061301, 1-11 (2006).
89. Thermal collapse of a granular gas under gravity. D. Volfson, B. Meerson, L. S. Tsimring, *Phys. Rev. E* **73**, 061305, 1-5 (2006).
90. Spectral formulation and WKB approximation for rare-events statistics in reaction systems. M. Assaf and B. Meerson, *Phys. Rev. E* **74**, 1-11, 041115 (2006).
91. Spectral theory of metastability and extinction in birth-death systems. M. Assaf and B. Meerson, *Phys. Rev. Lett.* **97**, 200602, 1-4 (2006). Selected for *Virtual J. of Biol. Phys. Res.*
92. Phase separation of a driven granular gas in annular geometry. M. Díez-Minguito and B. Meerson, *Phys. Rev. E* **75**, 011304, 1-8 (2007).
93. Spectral theory of metastability and extinction in a branching-annihilation reaction. M. Assaf and B. Meerson, *Phys. Rev. E* **75**, 031122, 1-8 (2007).
94. Formation and evolution of density singularities in hydrodynamics of inelastic gases. I. Fouxon, B. Meerson, M. Assaf, and E. Livne, *Phys. Rev. E* **75**, 050301 (Rapid Communication) 1-4 (2007).
95. van der Waals-like phase separation instability of a driven granular gas in three dimensions. R. Liu, Y. Li, M. Hou, and B. Meerson, *Phys. Rev. E* **75**, 061304, 1-7 (2007).
96. Formation of density singularities in ideal hydrodynamics of freely cooling inelastic gases: a family of exact solutions. I. Fouxon, B. Meerson, M. Assaf, and E. Livne, *Phys. Fluids* **19**, 093303, 1-17 (2007).
97. Self-similar asymptotics for a class of Hele-Shaw flows driven solely by surface tension. B. Meerson, P. V. Sasorov, and A. Vilenkin, *Physica D* **235**, 48-55 (2007).
98. Close-packed granular clusters: hydrostatics and persistent Gaussian fluctuations. B. Meerson, M. Díez-Minguito, T. Schwager, and T. Pöschel, *Granular Matter* **10**, 21-27 (2007).
99. Noise enhanced persistence in a biochemical regulatory network with feedback control. M. Assaf and B. Meerson, *Phys. Rev. Lett.* **100**, 058105, 1-4 (2008). Selected for *Virtual J. of Biol. Phys. Res.*
100. Attempted density blowup in a freely cooling dilute granular gas: hydrodynamics versus molecular dynamics. A. Puglisi, M. Assaf, I. Fouxon, and B. Meerson, *Phys. Rev. E* **77**, 021305, 1-10 (2008).
101. A nonlinear theory of non-stationary low Mach number channel flows of freely cooling nearly elastic granular gases. B. Meerson, I. Fouxon, and A. Vilenkin, *Phys. Rev. E* **77**, 021307, 1-19 (2008); *Phys. Rev. E* **78**, 039902(E) (2008).

102. Extinction of an infectious disease: a large fluctuation in a non-equilibrium system. A. Kamenev and B. Meerson, *Phys. Rev. E* **77**, 061107, 1-4 (2008). Selected for *Virtual J. of Biol. Phys. Res.*
103. Knudsen temperature jump and the Navier-Stokes hydrodynamics of granular gases driven by thermal walls. E. Khain, B. Meerson, and P. V. Sasorov, *Phys. Rev. E* **78**, 041303, 1-6 (2008).
104. Population extinction in a time-modulated environment. M. Assaf, A. Kamenev, and B. Meerson, *Phys. Rev. E* **78**, 041123, 1-13 (2008). Selected for *Virtual J. of Biol. Phys. Res.*
105. Noise driven unlimited population growth. B. Meerson and P. V. Sasorov, *Phys. Rev. E* **78**, 060103 (Rapid Communication), 1-4 (2008). Selected for *Virtual J. of Biol. Phys. Res.*
106. How colored environmental noise affects population extinction. A. Kamenev, B. Meerson, and B. Shklovskii, *Phys. Rev. Lett.* **101**, 268103, 1-4 (2008). Selected for *Virtual J. of Biol. Phys. Res.*
107. On population extinction risk in the aftermath of a catastrophic event. M. Assaf, A. Kamenev, and B. Meerson, *Phys. Rev. E* **79**, 011127, 1-11 (2009). Selected for *Virtual J. of Biol. Phys. Res.*
108. WKB theory of epidemic fade-out in stochastic populations. B. Meerson and P.V. Sasorov, *Phys. Rev. E* **80**, 041130, 1-4 (2009). Selected for *Virtual J. of Biol. Phys. Res.*
109. Emergence of stability in a stochastically-driven pendulum: Beyond the Kapitza pendulum. Y. B. Simons and B. Meerson, *Phys. Rev. E* **80**, 042102, 1-4 (2009).
110. Extinction of metastable stochastic populations. M. Assaf and B. Meerson, *Phys. Rev. E* **81**, 021116, 1-18 (2010).
111. Time-resolved extinction rates of stochastic populations. M. Khasin, B. Meerson, and P. V. Sasorov, *Phys. Rev. E* **81**, 031126, 1-8 (2010).
112. Speeding up endemic disease extinction with a limited amount of vaccine. M. Khasin, M.I. Dykman, and B. Meerson, *Phys. Rev. E* **81**, 051925, 1-11 (2010).
113. Large fluctuations in stochastic population dynamics: momentum space calculations. M. Assaf, B. Meerson, and P. V. Sasorov, *J. Stat. Mech.* (2010) P07018, 1-28.
114. Navier-Stokes hydrodynamics of thermal collapse in a freely cooling granular gas. I. Kolvin, E. Livne, and B. Meerson, *Phys. Rev. E* **82**, 021302, 1-17 (2010).
115. Stochastic models of population extinction. O. Ovaskainen and B. Meerson, *Trends in Ecology & Evolution* **25**, 643-652 (2010).
116. Extinction rates of established spatial populations. B. Meerson and P.V. Sasorov, *Phys. Rev. E* **83**, 011129, 1-22 (2011).
117. Velocity fluctuations of population fronts propagating into metastable states. B. Meerson, P. V. Sasorov, and Y. Kaplan, *Phys. Rev. E* **84**, 011147, 1-7 (2011).

118. Negative velocity fluctuations of pulled reaction fronts. B. Meerson and P.V. Sasorov, *Phys. Rev. E* **84**, 030101 (Rapid Communication), 1-4 (2011).
119. Noise induced stabilization in population dynamics. M. Parker, A. Kamenev, and B. Meerson, *Phys. Rev. Lett.* **107**, 180603, 1-4 (2011).
120. Switching between phenotypes and population extinction. I. Lohmar and B. Meerson, *Phys. Rev. E* **84**, 051901, 1-11 (2011).
121. Multiple extinction routes in stochastic population models. O. Gottesman and B. Meerson, *Phys. Rev. E* **85**, 021140, 1-9 (2012).
122. Fluctuations of current in non-stationary diffusive lattice gases. P.L. Krapivsky and B. Meerson, *Phys. Rev. E* **86**, 031106, 1-11 (2012).
123. Minimizing the population extinction risk by migration. M. Khasin, B. Meerson, E. Khain, and L. M. Sander, *Phys. Rev. Lett.* **109**, 138104, 1-4 (2012).
124. Void formation in diffusive lattice gases. P. L. Krapivsky, B. Meerson, and P. V. Sasorov, *J. Stat. Mech.* (2012) P12014, 1-30.
125. Survival of the scarcer. A. Gabel, B. Meerson, and S. Redner, *Phys. Rev. E* **87**, 010101 (Rapid Communication) 1-5 (2013).
126. Emergence of fluctuating traveling front solutions in macroscopic theory of noisy invasion fronts. B. Meerson, A. Vilenkin, and P. V. Sasorov, *Phys. Rev. E* **87**, 012117, 1-6 (2013).
127. Velocity fluctuations of noisy reaction fronts propagating into a metastable state: testing theory in stochastic simulations. E. Khain and B. Meerson, *J. Phys. A: Theor. Math.* **46**, 125002, 1-9 (2013); **46**, 139601, 1 (2013).
128. Impact of colored environmental noise on the extinction of a long-lived stochastic population: Role of the Allee effect. E. Y. Levine and B. Meerson, *Phys. Rev. E* **87**, 032127, 1-11 (2013).
129. Immigration-extinction dynamics of stochastic populations. B. Meerson and O. Ovaskainen, *Phys. Rev. E* **88**, 012124, 1-6 (2013).
130. Extreme current fluctuations in a nonstationary stochastic heat flow. B. Meerson and P.V. Sasorov, *J. Stat. Mech.* (2013) P12011, 1-27.
131. Extreme current fluctuations in lattice gases: beyond non-equilibrium steady states. B. Meerson and P.V. Sasorov, *Phys. Rev. E* **89**, 010101 (Rapid Communication) 1-5 (2014).
132. Extreme fluctuations of current in the symmetric simple exclusion process: a non-stationary setting. A. Vilenkin, B. Meerson and P.V. Sasorov, *J. Stat. Mech.* (2014) P06007, 1-29.
133. First invader dynamics in diffusion-controlled absorption. S. Redner and B. Meerson, *J. Stat. Mech.* (2014) P06019. Erratum: *J. Stat. Mech.* (2015) E06002, see also arXiv:1404.2181.
134. Large fluctuations in diffusion-controlled absorption. B. Meerson and S. Redner, *J. Stat. Mech.* (2014) P08008, 1-14.
135. Survival of a static target in a gas of diffusing particles with exclusion. B. Meerson, A. Vilenkin and P.L. Krapivsky, *Phys. Rev. E* **90**, 022120, 1-13 (2014) (Editor's suggestion).

136. Two-strain competition in quasineutral stochastic disease dynamics. O. Kogan, M. Khasin, B. Meerson, D. Schneider, and C.R. Myers, *Phys. Rev. E* **90**, 042149, 1-17 (2014).
137. Full absorption statistics of diffusing particles with exclusion. B. Meerson, *J. Stat. Mech.* (2015) P04009, 1-21.
138. The number statistics and optimal history of non-equilibrium steady states of mortal diffusing particles. B. Meerson, *J. Stat. Mech.* (2015) P05004, 1-15.
139. Mortality, redundancy, and diversity in stochastic search. B. Meerson and S. Redner, *Phys. Rev. Lett.* **114**, 198101, 1-5 (2015).
140. Colonization of a territory by a stochastic population under a strong Allee effect and a low immigration pressure. S. Be'er, M. Assaf, and B. Meerson, *Phys. Rev. E* **91**, 062126, 1-7 (2015).
141. Survival of interacting diffusing particles inside a domain with absorbing boundary. T. Agranov, B. Meerson, and A. Vilenkin, *Phys. Rev. E* **93**, 012136, 1-15 (2016).
142. Macroscopic fluctuation theory and first-passage properties of surface diffusion. B. Meerson and A. Vilenkin, *Phys. Rev. E (Rapid Communication)* **93**, 020102, 1-5 (2016). Erratum: *Phys. Rev. E* **93**, 059901 (2016).
143. Large deviations of surface height in the Kardar-Parisi-Zhang equation. B. Meerson, E. Katzav and A. Vilenkin, *Phys. Rev. Lett.* **116**, 070601, 1-5 (2016).
144. Extinction of oscillating populations. N. Smith and B. Meerson, *Phys. Rev. E* **93**, 032109, 1-8 (2016).
145. Statistics of large currents in the Kipnis-Marchioro-Presutti model in a ring geometry. L. Zarfaty and B. Meerson, *J. Stat. Mech.* (2016) 033304, 1-23.
146. Large-displacement statistics of the rightmost particle of the one-dimensional branching Brownian motion. B. Derrida, B. Meerson and P.V. Sasorov, *Phys. Rev. E* **93**, 042139, 1-9 (2016).
147. Short-time height distribution in one-dimensional Kardar-Parisi-Zhang equation: starting from a parabola. A. Kamenev, B. Meerson and P. V. Sasorov, *Phys. Rev. E* **94**, 032108, 1-9 (2016).
148. Dynamical phase transition in large-deviation statistics of the Kardar-Parisi-Zhang equation. M. Janas, A. Kamenev and B. Meerson, *Phys. Rev. E* **94**, 032133, 1-11 (2016).
149. Local average height distribution of fluctuating interfaces. N. R. Smith, B. Meerson and P. V. Sasorov, *Phys. Rev. E* **95**, 012134, 1-11 (2017).
150. WKB theory of large deviations in stochastic populations. M. Assaf and B. Meerson, *J. Phys. A: Math. Theor.* **50**, 263001, 1-63 (2017).
151. Large deviations of surface height in the 1+1-dimensional Kardar-Parisi-Zhang equation: exact long-time results for $\lambda H < 0$. P.V. Sasorov, B. Meerson and S. Prolhac, *J. Stat. Mech.* (2017) 063203, 1-13 (featured article).
152. Fluctuations of absorption of interacting diffusing particles by multiple absorbers. T. Agranov and B. Meerson, *Phys. Rev. E* **95**, 062124, 1-14 (2017).

153. Height distribution tails in the Kardar-Parisi-Zhang equation with Brownian initial conditions. B. Meerson and J. Schmidt, *J. Stat. Mech.* (2017) 103207 (featured article). Erratum: *J. Stat. Mech.* (2017) 129901.
154. Finite-size effects in the short-time height distribution of the Kardar-Parisi-Zhang equation. N. R. Smith, B. Meerson and P. V. Sasorov, *J. Stat. Mech.* (2018) 023202.
155. Narrow escape of interacting diffusing particles. T. Agranov and B. Meerson, *Phys. Rev. Lett.* **120**, 120601 (2018).
156. Landau theory of the short-time dynamical phase transitions of the Kardar-Parisi-Zhang interface. N. R. Smith, A. Kamenev and B. Meerson, *Phys. Rev. E* **97**, 042130 (2018) (Editor's suggestion).
157. Nonequilibrium steady state of a weakly-driven Kardar-Parisi-Zhang equation. B. Meerson, P. V. Sasorov and A. Vilenkin, *J. Stat. Mech.* (2018) 053201.
158. Large deviations of a long-time average in the Ehrenfest urn model, B. Meerson and P. Zilber, *J. Stat. Mech.* (2018) 053202. Erratum: *J. Stat. Mech.* (2018) 119901.
159. Exact short-time height distribution for the flat Kardar-Parisi-Zhang interface. N. R. Smith and B. Meerson, *Phys. Rev. E* **97**, 052110 (2018).
160. Large fluctuations of a Kardar-Parisi-Zhang interface on a half line. B. Meerson and A. Vilenkin, *Phys. Rev. E* **98**, 032145, 1-9 (2018).
161. Survival, absorption and escape of interacting diffusing particles. T. Agranov and B. Meerson, in *“Chemical Kinetics Beyond the Textbook”*, edited by K. Lindenberg, R. Metzler and G. Oshanin (World Scientific, Singapore, 2019), chapter 9, p. 221; arXiv:1806.02114.
162. Large fluctuations of the area under a constrained Brownian excursion. B. Meerson, *J. Stat. Mech.* (2019) 013210.
163. Comment on “Minimum action path theory reveals the details of stochastic transitions out of oscillatory states” (by R. de la Cruz *et al.*). B. Meerson and N. Smith, *Phys. Rev. Lett.* **122**, 059801 (2019).
164. Redundancy, extreme statistics and geometrical optics of Brownian motion: Comment on “Redundancy principle and the role of extreme statistics in molecular and cellular biology” (by Z. Schuss *et al.*). S. Redner and B. Meerson, *Phys. Life Rev.* **28**, 80 (2019).
165. Geometrical optics of constrained Brownian excursion: from the KPZ scaling to dynamical phase transitions. N. R. Smith and B. Meerson, *J. Stat. Mech.* (2019) 023205.
166. Large fluctuations of a Kardar-Parisi-Zhang interface on a half-line: the height statistics at a shifted point. T. Asida, E. Livne and B. Meerson, *Phys. Rev. E* **99**, 042132 (2019).
167. Occupation-time statistics of a gas of interacting diffusing particles. T. Agranov, P. L. Krapivsky and B. Meerson, *Phys. Rev. E* **99**, 052102 (2019).
168. Giant disparity and a dynamical phase transition in large deviations of the time-averaged size of stochastic populations. P. Zilber, N. R. Smith and B. Meerson, *Phys. Rev. E* **99**, 052105 (2019).

169. Time-averaged height distribution of the Kardar-Parisi-Zhang interface. N. R. Smith, B. Meerson and A. Vilenkin, *J. Stat. Mech.* (2019) 053207.
170. Mortal Brownian motion: three short stories. B. Meerson, *Int. J. Mod. Phys. B* **33**, 1950172 (2019); arXiv:1903.03963.
171. Geometrical optics of constrained Brownian motion: three short stories. B. Meerson and N. R. Smith, *J. Phys. A: Math. Theor.* **52**, 415001 (2019).
172. Anomalous scaling of dynamical large deviations of stationary Gaussian processes. B. Meerson, *Phys. Rev. E* **100**, 042135 (2019).
173. Optimal paths of non-equilibrium stochastic fields: the Kardar-Parisi-Zhang interface as a test case. A. K. Hartmann, B. Meerson and P. Sasorov, *Phys. Rev. Res.* **1**, 032043 (Rapid Communication) (2019).
174. Statistics of first-passage Brownian functionals. S. N. Majumdar and B. Meerson, *J. Stat. Mech.* (2020) 023202. Corrigendum: *J. Stat. Mech.* (2021) 039801.
175. Airy distribution: Experiment, large deviations and additional statistics. T. Agranov, P. Zilber, N. R. Smith, T. Admon, Y. Roichman and B. Meerson, *Phys. Rev. Res.* **2**, 013174 (2020).
176. Toward the full short-time statistics of an active Brownian particle on the plane. S. N. Majumdar and B. Meerson, *Phys. Rev. E* **102**, 022113 (2020).
177. Velocity fluctuations of stochastic reaction fronts propagating into an unstable state: strongly pushed fronts. E. Khain, B. Meerson and P. Sasorov, *Phys. Rev. E* **102**, 022137 (2020).
178. Area fluctuations on a subinterval of Brownian excursion. B. Meerson, *J. Stat. Mech.* (2020) 103208.
179. Persistent fluctuations of the swarm size of Brownian bees. B. Meerson and P. Sasorov, *Phys. Rev. E* **103**, 032140 (2021).
180. Observing symmetry-broken optimal paths of stationary Kardar-Parisi-Zhang interface via a large-deviation sampling of directed polymers in random media. A. K. Hartmann, B. Meerson and P. Sasorov, *Phys. Rev. E* **104**, 054125 (2021).
181. Fluctuations of a swarm of Brownian bees, M. Siboni, P. Sasorov and B. Meerson, *Phys. Rev. E* **104**, 054131 (2021).
182. Negative autocorrelations strongly suppress thermally activated particle motion in short-correlated quenched Gaussian disorder potentials. B. Meerson, *Phys. Rev. E* **105**, 034106 (2022).
183. Inverse scattering method solves the problem of full statistics of nonstationary heat transfer in the Kipnis-Marchioro-Presutti model. E. Bettelheim, N. R. Smith and B. Meerson, *Phys. Rev. Lett.* **128**, 130602 (2022).
184. Geometrical optics of large deviations of fractional Brownian motion, B. Meerson and G. Oshanin, *Phys. Rev. E* **105**, 064137 (2022).

185. Fluctuations and first-passage properties of systems of Brownian particles with reset. O. Vilks, M. Assaf and B. Meerson, *Phys. Rev. E* **106**, 024117 (2022).
186. Full statistics of nonstationary heat transfer in the Kipnis-Marchioro-Presutti model. E. Bettelheim, N. R. Smith and B. Meerson, *J. Stat. Mech.* (2022) 093103.
187. Competition in a system of Brownian particles: Encouraging achievers. P. L. Krapivsky, O. Vilks and B. Meerson, *Phys. Rev. E* **106**, 034125 (2022).
188. Path integrals for fractional Brownian motion and fractional Gaussian noise. B. Meerson, O. Bénichou and G. Oshanin, *Phys. Rev. E* **106**, L062102 (2022).
189. Geometrical optics of first-passage functionals of random acceleration. B. Meerson, *Phys. Rev. E* **107**, 064122 (2023).
190. Large deviations of the interface height in the Golubović-Bruinsma model of stochastic growth. B. Meerson and A. Vilenkin, *Phys. Rev. E* **108**, 014117 (2023).
191. Geometrical optics of large deviations of Brownian motion in inhomogeneous media. T. Bar and B. Meerson, *J. Stat. Mech.* (2023) 093301.
192. Short-time large deviations of the spatially averaged height of a KPZ interface on a ring. T. Schorlepp, P. Sasorov and B. Meerson, *J. Stat. Mech.* (2023) 123202.
193. Large deviations and phase transitions in spectral linear statistics of Gaussian random matrices. A. Valov, B. Meerson and P. V. Sasorov, *J. Phys. A: Math. Theor.* **57** (2024) 065001.
194. First-passage area distribution and optimal fluctuations of fractional Brownian motion. A. K. Hartmann and B. Meerson, *Phys. Rev. E* **109**, 014146 (2024).
195. Macroscopic fluctuation theory of local time in lattice gases. N. R. Smith and B. Meerson, *Physica A* **639**, 129616 (2024).
196. Complete integrability of the problem of full statistics of nonstationary mass transfer in the Simple Inclusion Process, E. Bettelheim and B. Meerson, arXiv:2403.19536.