

# Luca Peliti

## Curriculum Vitæ

### General information

- **Born:** Rome (Italy), 18 August 1948.
- **Nationality:** Italian.
- **Family status:** Married, two children.
- **Languages:** Italian, French, English; Spanish and German not fluently.
- **E-mail:** [luca@peliti.org](mailto:luca@peliti.org)
- **Home page:** <https://www.peliti.org>
- **Present position:** Retired

### Studies

- Laurea in Fisica (24 February 1971). University of Rome. Note: 110/110 *cum laude*.
- Ph. D. (17 June 1974). Queen Mary College, University of London.

### Positions

1. Scholarship, Ministry of Education (Italy), 1972–74.
2. Associate researcher, University of Rome, 1974–78.
3. Voluntary researcher, Gruppo Nazionale di Struttura della Materia, 1974–1994.
4. Temporary foreign collaborator, Service de Physique Théorique, Centre d'Études Nucléaires de Saclay (France) 1975–77.
5. Lecturer of Structure of Matter, Università della Calabria, Cosenza (Italy), 1977–78.
6. Lecturer in Physics (Pharmacy), University of Camerino (Italy), 1978–79.
7. Assistant of Structure of Matter, University “La Sapienza” (Rome), 1979–83.
8. Associate Professor of Experimental Physics, University de Rome “La Sapienza”, 1983–87.

9. Associate Researcher, Istituto Nazionale di Fisica Nucleare, from 1985 to 2014.
10. Professor of Quantum Mechanics, University “Federico II”, Naples, 1987–88.
11. Researcher, Istituto Nazionale di Fisica della Materia, 1994–2005.
12. Researcher, Consorzio Nazionale Interuniversitario di Struttura della Materia, 2005–2009.
13. Professor of Statistical Mechanics, Department of Physics, University “Federico II”, Naples (Italy) 1988–2014.
14. Member, Simons Center for Systems Biology, School of Natural Sciences, Institute for Advanced Study, Princeton (NJ) 2013–2016.
15. Deputy Director, SMRI (Italy), since 2017.

## Other activities

- Editor of the following journals:
  - Journal of Statistical Mechanics: Theory and Experiment
  - Journal of Statistical Physics
- Moderator of the electronic archive [arXiv:q-bio](https://arxiv.org/archive/qbio) (Quantitative Biology), sector: Populations and Evolution.
- External Member of the Kavli Institute for Theoretical Physics at the University of California, Santa Barbara (USA).
- Organizer of several international meetings and in particular of two programs at the Kavli Institute for Theoretical Physics in Santa Babrbara:
  - Statistical Physics and Biological Information (January-June 2001);
  - Viral and Bacterial Evolution (January-March 2011).

## Publications in scientific journals

The type of publication is determined by the following code: (A): article; (R): review; (L): letter; (C): comment; (E): erratum.

1. Alex Blokhuis, Philippe Nghe, Luca Peliti and David Lacoste: The generality of transient compartmentalization and its associated error thresholds, *Journal of Theoretical Biology* **487** 110110 (2020) arXiv:1901.04753 (A)
2. Gabin Laurent, Luca Peliti and David Lacoste: Survival of self-replicating molecules under transient compartmentalization with natural selection, *Life* **9**(4), 78 (2019) (A)
3. A. Blokhuis, D. Lacoste, P. Nghe and L. Peliti: Selection dynamics in transient compartmentalization, *Phys. Rev. Lett.* **120** 158101 (2018) arXiv:1802.00208 (L)
4. Luca Peliti and Raúl Rechtman: Einstein's Approach to Statistical Mechanics: The 1902-04 Papers, *Journal of Statistical Physics* **167** 1020-1038 (2017) arXiv:1606.04890 (A)
5. Luca Peliti: Elementary derivation of the expressions of momentum and energy in special relativity, *Revista Brasileira de Ensino de Física* **38**(2) e2312 (2016) arXiv:1504.07287 (A)
6. Riccardo Rao and Luca Peliti: Thermodynamics of accuracy in kinetic proof-reading: Dissipation and efficiency trade-offs, *Journal of Statistical Mechanics: Theory and Experiment* P06001 (2015). arXiv:1504.02494 (A)
7. Lance J. Putnam, JoAnn Kuchera-Morin and Luca Peliti: Studies in Composing Hydrogen Atom Wavefunctions, *Leonardo* **48**(2) 158-166, April 2015 (doi: 10.1162/LEON\_a\_00912). (A)
8. Lorenzo Pucci, Massimiliano Esposito and Luca Peliti: Entropy Production in Quantum Brownian Motion, *J. Stat. Mech.* (2013) P4005, arXiv:cond-mat/1210.4111 (A)
9. Paolo Muratore-Ginanneschi, Carlos Mejía-Monasterio and Luca Peliti: Heat release by controlled continuous-time Markov jump processes, *J. Stat. Phys.* **150** 181–203 (2013)(A).
10. Luca Peliti: Comment on “Evolutionary dynamics of RNA-like replicator systems: A bioinformatic approach to the origin of life”, by Nobuto Takeuchi and Paulien Hogeweg, *Physics of Life Reviews* DOI:10.1016/j.plrev.2012.06.006 (C).
11. Rémi Lehe, Oskar Hallatschek and Luca Peliti: The rate of beneficial mutations surfing on the wave of a range expansion, *PLoS Comp. Biol.*, **8** e1002447 (2012)(A).
12. Natalia Golubeva, Alberto Imparato and Luca Peliti: Efficiency of molecular machines with continuous phase space, *Europhysics Letters*, **97** 60005 (2012)(L).

13. Ginestra Bianconi, Davide Fichera, Silvio Franz and Luca Peliti: Modeling microevolution in a changing environment: The evolving quasispecies and the Diluted Champion Process, *JSTAT: Journal of Statistical Mechanics: Theory and Experiment*, P08022 (2011)(A).
14. Anne-Florence Bitbol, Luca Peliti and Jean-Baptiste Fournier: Membrane stress tensor in the presence of lipid density and composition inhomogeneities, *Eur. Phys. J. E* **34** 53 (2011)(A).
15. A. Imparato and L. Peliti: Work distribution in manipulated single biomolecules, *Phys. Biol.* **6** 025011 (2009)(A).
16. Luca Peliti: Comment on “Failure of the work-Hamiltonian connection for free energy calculations”, *Phys. Rev. Lett.* **101** 098903 (2008)(C).
17. L. Peliti: On the work-Hamiltonian connection in manipulated systems, *JSTAT: Journal of Statistical Mechanics: Theory and Experiment*, P05002 (2008)(A).
18. A. Imparato, L. Peliti, G. Pesce, G. Rusciano, A. Sasso: Work and heat probability distribution for an optically driven Brownian particle: Theory and experiments, *Phys. Rev. E* **76** 050101(R) (2007)(A).
19. Sumedha, Olivier C. Martin, Luca Peliti: Selection and population size effects in evolutionary dynamics, *JSTAT: Journal of Statistical Mechanics: Theory and Experiment*, P05011 (2007)(A).
20. Alberto Imparato and Luca Peliti: The distribution function of entropy flow in stochastic systems, *JSTAT: Journal of Statistical Mechanics: Theory and Experiment*, L02001 (2007)(L).
21. Luca Peliti: On the equipartition of energy in an ideal gas mixture, *European Journal of Physics* **28**, 249–254 (2007)(A).
22. A. Imparato and L. Peliti: Fluctuation relations for a driven Brownian particle, *Phys. Rev. E* **74** 026106 (2006)(A).
23. Cristian Giardinà, Jorge Kurchan, Luca Peliti: Direct evaluation of large-deviation functions, *Phys. Rev. Lett.* **96** 120603 (2006)(L).
24. Alberto Imparato, Luca Peliti: Evaluation of free energy landscapes from manipulation experiments, *JSTAT: Journal of Statistical Mechanics: Theory and Experiment*, P03005 (2006)(A).
25. A. Imparato, L. Peliti: Work probability distribution in single-particle experiments, *Europhys. Lett.*, **69** 643–650 (2005)(L).
26. Francesca Tria, Michael Lässig, Luca Peliti, Silvio Franz: A minimal stochastic model for influenza evolution, *JSTAT: Journal of Statistical Mechanics: Theory and Experiment*, P07008 (2005)(A).
27. A. Imparato, L. Peliti: Work probability distribution in systems driven out of equilibrium, *Phys. Rev. E* **72** 046114 (2005)(A).

28. S. Gekle, L. Peliti, S. Galam: Opinion dynamics in a three-choice system, *Eur. Phys. J. B* **45** 569–575 (2005)(A).
29. A. Imparato, L. Peliti: Work distribution and path integrals in general mean-field systems, *Europhysics Letters* **70** 740–746 (2005)(L).
30. A. Imparato, L. Peliti: Kinetic barriers in RNA unzipping, *Eur. Phys. J. B.*, **39** 357–363 (2004)(L).
31. Y. Kafri, D. Mukamel, L. Peliti: Kafri, Mukamel and Peliti Reply, *Phys. Rev. Lett.* **90** 159802-1 (2003)(C).
32. M. Lässig, L. Peliti, F. Tria: Evolutionary games and quasispecies, *Europhys. Lett.* **62** 446–451 (2003)(L).
33. Y. Kafri, D. Mukamel, L. Peliti: Melting and unzipping of DNA, *Eur. Phys. J. B* **27** 135-146 (2002)(A).
34. L. Peliti: Quasispecies evolution in general mean-field landscapes, *Europhysics Lett.* **57** 745–751 (2002)(L).
35. A. Parmeggiani, F. Jülicher, L. Peliti, J. Prost: Detachment of molecular motors under tangential loading, *Europhys. Lett.* **56** 603–609 (2001)(L).
36. J.-B. Fournier, A. Ajdari, L. Peliti: Effective-Area Elasticity and Tension of Micromanipulated Membranes, *Phys. Rev. Lett.* **86** 4970–4973 (2001)(L).
37. J.-B. Fournier, L. Peliti: Comment on “Theory for the bending anisotropy of lipid membranes and tubule formation”, *Phys. Rev. E* **63** 13901-13902 (2001)(L).
38. Y. Kafri, D. Mukamel, L. Peliti: Why is the DNA denaturation transition first order? *Phys. Rev. Lett.* **85** 4988-4991 (2000)(L).
39. Raphaël Exartier, Luca Peliti: Measuring effective temperatures in out-of-equilibrium driven systems, *Eur. Phys. J. B* **16** 119–126 (2000)(A).
40. Silvio Franz, Marc Mézard, Giorgio Parisi, Luca Peliti: The response of a glassy system to random perturbations: A bridge between equilibrium and off-equilibrium, *J. Stat. Phys.* **97** 459–488 (1999)(A).
41. R. Exartier, L. Peliti: A simple system with two temperatures, *Physics Letters A* **261** 94–97 (1999)(L).
42. M. Bengrine, A. Benyoussef, A. El Kenz, F. Mhirech, L. Peliti: Amorphization and anisotropy effects on a ferromagnetic bilayer system, *Physica B: Condensed Matter* **269** 34–42 (1999)(A).
43. L. Peliti, M. Saber: Effective Field Approach to the Ising Film in a Transverse Field, *Physica A* **262** 505–517 (1999)(A).
44. A. Benyoussef, D. Dohmi, A. El Kenz, L. Peliti: Phase Diagram of Randomly Polymerized Membrane, *Eur. Phys. J. B* **6** 503–510 (1998)(A).

45. L. Peliti: A Solvable Model of the Evolutionary Loop, *Europhys. Lett.* **44** 546–551 (1998)(L).
46. J.-B. Fournier, L. Peliti: Paired Defects of Nematic Surfactant Bilayers, *Phys. Rev. E* **58** R6919–R6922 (1998)(L).
47. S. Franz, M. Mézard, G. Parisi, L. Peliti: Measuring Equilibrium Properties in Aging Systems, *Phys. Rev. Lett.* **81** 1758–1761 (1998)(L).
48. R. Donato, L. Peliti, M. Serva: The Selection of Altruistic Behavior, *Theory Bioscienc.* **116** 309–320 (1997)(A).
49. J. Kurchan, L. Peliti, M. Sellitto: Aging in Lattice-Gas Models with Constrained Dynamics, *Europhys. Lett.* **39** 365–370 (1997)(L).
50. P. Le Doussal, L. F. Cugliandolo, L. Peliti: Dynamics of Particles and Manifolds in Random Force Fields, *Europhys. Lett.* **39** 111–116 (1997)(L).
51. S. Franz, L. Peliti: Error Threshold in Simple Landscapes, *J. Phys. A: Math. Gen.* **30** 4481–4487 (1997)(L).
52. L. F. Cugliandolo, J. Kurchan, L. Peliti: Energy Flow, Partial Equilibration, and Effective Temperatures in Systems with Slow Dynamics, *Phys. Rev. E* **55** 3898–3914 (1997)(A).
53. L. F. Cugliandolo, J. Kurchan, P. Le Doussal, L. Peliti: Glassy Behavior in Disordered Systems with Non-Relaxational Dynamics, *Phys. Rev. Lett.* **78** 350–354 (1997)(L).
54. L. Peliti, M. Saber: The Spin-3/2 Blume-Capel Model on a Honeycomb Lattice, *Phys. Stat. Sol. (b)* **195** 537–548 (1996) (A).
55. G. Duchateau-Nguyen, G. Weisbuch, L. Peliti: A Compartmental Model of Endosymbiosis, *Journal of Biological Systems* **3** 867–888 (1995)(A).
56. F. Manzo, L. Peliti: Geographic Speciation in the Derrida-Higgs Model of Species Formation, *J. Phys. A: Math. Gen.* **27** 7079–7086 (1994) (A).
57. J. Kurchan, L. Peliti, M. Saber: A Statistical Investigation of Bidirectional Associative Memories (BAM), *J. Phys. I France* **4** 1627–1639 (1994) (A).
58. A. Ajdari, D. Mukamel, L. Peliti, J. Prost: Rectified Motion Induced by ac Forces in Periodic Structures, *J. Phys. I France* **4** 1551–1561 (1994)(A).
59. J. W. Tucker, M. Saber, L. Peliti: A New Technique in the Effective Field Theory of General Spin  $S$  Dilute Ising Models, *Physica A* **206** 497–507 (1994) (A).
60. L. Peliti, U. Bastolla: Collective Adaptation in a Statistical Model of an Evolving Population, *C. R. Acad. Sci. Paris, Sciences de la Vie* **317** 371–374 (1994) (L).
61. J. Prost, J.-F. Chauwin, L. Peliti, A. Ajdari: Asymmetric Pumping of Particles, *Phys. Rev. Lett.* **72** 2652–2655 (1994)(L).

62. S. Franz, L. Peliti, M. Sellitto: An Evolutionary Version of the Random Energy Model, *J. Phys. A: Math. Gen.* **26** L1195–L1199 (1993) (L).
63. J. Piasecki, L. Peliti: Harmonic Properties of Hard-Sphere Crystals: A One-Dimensional Study, *J. Phys. A: Math. Gen.* **26** 4819–4825 (1993) (A).
64. D. Bensimon, D. Mukamel, L. Peliti: Quenched Curvature Disorder in Polymerized Membranes, *Europhys. Lett.* **18** 269–274 (1992) (L).
65. A. Ajdari, B. Duplantier, D. Hone, L. Peliti, J. Prost: “Pseudo-Casimir” Effect in Liquid Crystals, *J. Phys. II France* **2** 487–501 (1992) (A).
66. U. Bastolla, L. Peliti: Un modèle statistique d’évolution avec sélection stabilisante, *C. R. Acad. Sci. Paris, Série III* **313** 101–105 (1991)(L).
67. M. Serva, L. Peliti: A Statistical Model of an Evolving Population with Sexual Reproduction, *J. Phys. A: Math. Gen.* **24** L705–L709 (1991)(L).
68. B. Derrida, L. Peliti: Evolution in a Flat Fitness Landscape, *Bull. Math. Biol.* **53** 355–382 (1991)(A).
69. A. Ajdari, L. Peliti, J. Prost: Fluctuation-Induced Long-Range Forces in Liquid Crystals, *Phys. Rev. Lett.* **66** 1481–1484 (1991)(L).
70. C. Amitrano, L. Peliti, M. Saber: Population Dynamics in a Spin-Glass Model of Chemical Evolution, *J. Mol. Evol.* **29** 513–525 (1989)(A).
71. E. Guitter, F. David, S. Leibler, L. Peliti: Thermodynamical Behavior of Polymerized Membranes, *J. Phys. France* **50** 1787–1819 (1989)(A).
72. L. Peliti, J. Prost: Fluctuations in Membranes with Reduced Symmetry, *J. Phys. France* **50** 1557–1571 (1989)(A).
73. E. Guitter, F. David, S. Leibler, L. Peliti: Crumpling and Buckling Transitions in Polymerized Membranes, *Phys. Rev. Lett.* **61** 2949–2952 (1988)(L).
74. C. Amitrano, L. Peliti, M. Saber: Neutralisme et adaptation dans un modèle simple d’évolution moléculaire, *C. R. Acad. Sci. Paris, Série III*, **307** 803–806 (1988)(L).
75. A. Mecozzi, F. De Pasquale, L. Peliti: Unified Approach to Stochastic Representations in Reaction Kinetics, *N. Cim.* **100B** 733–743 (1987)(A).
76. F. David, E. Guitter, L. Peliti: Critical Properties of Fluid Membranes with Hexatic Order, *J. Phys. France* **48** 2059–2066 (1987)(A).
77. A. Crisanti, L. Peliti: On the Possible Non-Universality of Critical Behavior in Micellar Solutions, *J. Phys. A: Math. Gen.* **20** 1289–1292 (1987)(L).
78. L. Peliti, L. Pietronero: Random Walks with Memory, *Riv. N. Cim.* **10** (6) 1–33 (1987)(R).
79. D.R. Nelson, L. Peliti: Fluctuations in Membranes with Crystalline and Hexatic Order, *J. Phys. France* **48** 1085–1091 (1987)(A); **49** 139 (1988)(E).

80. C. Castellani, C. Di Castro, L. Peliti: On the Upper Critical Dimension in Anderson Localisation, *J. Phys. A: Math. Gen.* **19** L1099–L1103 (1986)(L).
81. G. Paladin, L. Peliti, A. Vulpiani: Intermittency as Multifractality in History Space, *J. Phys. A: Math. Gen.* **19** L991–L996 (1986)(L).
82. C. Castellani, L. Peliti: Multifractal Wavefunction at the Localisation Threshold, *J. Phys. A: Math. Gen.* **19** L429–L432 (1986)(L).
83. L. Peliti: Renormalisation of Fluctuation Effects in the  $A + A \rightarrow A$  Reaction, *J. Phys. A: Math. Gen.* **19** L365–L367 (1986)(L).
84. G. Paladin, L. Peliti, A. Vulpiani: Feasibility of Model Ecosystems, *N. Cim.* **7D** 98–104 (1986)(A).
85. L. Peliti, Zhang Y.-C.: Field Theory Approach to the Eden Model and Diffusion-Limited Aggregation, *J. Physique Lett.* **46** L1151–L1157 (1985)(L).
86. L. Peliti: Path Integral Approach to Birth-Death Processes on a Lattice, *J. Phys. France* **46** 1469–1483 (1985)(A).
87. L. Pietronero, L. Peliti: Flory Approach to the Enhancement Factor in Polymer Statistics, *Phys. Rev. Lett.* **55** 1479–1481 (1985)(L).
88. Zhang Y.-C., L. Peliti: “True” Self-Avoiding Lévy Flights, *J. Phys. A: Math. Gen.* **18** L755–L756 (1985)(L).
89. L. Peliti, Zhang Y.-C.: Renormalisation of the Long-Range “True” Self-Avoiding Walk, *J. Phys. A: Math. Gen.* **18** L709–L712 (1985)(L).
90. A. Crisanti, L. Peliti: Migdal-Kadanoff Approach to Superfluid Film Formation in  $^3\text{He}$ - $^4\text{He}$  Mixtures, *J. Phys. A: Math. Gen.* **18** L543–L547 (1985)(L).
91. L. Peliti, S. Leibler: Effects of Thermal Fluctuations on Systems with Small Surface Tension, *Phys. Rev. Lett.* **54** 1690–1693 (1985)(L).
92. L. Peliti: Some Observations on Kinetic Walk Models, *J. Physique Lett.* **45** L925–L928 (1984)(L).
93. L. Peliti, S. Leibler: A Simple Model describing  $^3\text{He}$ - $^4\text{He}$  Mixtures near a Wall, *J. Physique Lett.* **45** L591–L596 (1984)(L).
94. S. Leibler, L. Peliti: Possible Observation of Surface and Special Transitions in Mixtures, *Phys. Rev. B* **29** 1253–1257 (1984)(A).
95. L. Peliti, S. Leibler: Strong Adsorption in Critical Binary Mixtures, *J. Phys. C: Solid State* **16** 2635–2640 (1983)(A).
96. R. Benzi, L. Peliti, A. Vulpiani: Fractal Dimensions and  $1/f$  Noise, *Lett. N. Cim.* **36** 471–474 (1983)(L).
97. S.P. Obukhov, L. Peliti: Renormalisation of the “True” Self-Avoiding Walk, *J. Phys. A: Math. Gen.* **16** L147–L152 (1983)(L).



98. D.J. Amit, G. Parisi, L. Peliti: Asymptotic Behavior of the “True” Self-Avoiding Walk, *Phys. Rev. B* **27** 1635–1645 (1983)(A).
99. S. Leibler, L. Peliti: Magnetisation Profile in Presence of a Surface Magnetic Field, *J. Phys. C: Solid State* **30** L403–L407 (1982)(L).
100. F. Fucito, F. Marchesoni, E. Marinari, G. Parisi, L. Peliti, S. Ruffo, A. Vulpiani: Approach to Equilibrium in a Chain of Nonlinear Oscillators, *J. Phys. France* **43** 707–713 (1982)(A).
101. D.J. Amit, L. Peliti: On Dangerous Irrelevant Operators, *Ann. Phys. (N.Y.)* **140** 207–231 (1982)(A).
102. G. Paladin, L. Peliti: Fixed Dimensional Computation of Critical Transport Properties of Fluids, *J. Physique Lett.* **43** L15–L20 (1982)(L); **45** L268 (1984)(E).
103. D.J. Amit, Y.Y. Goldschmidt, L. Peliti: Cross-Over Behavior of the Nonlinear  $\sigma$ -Model with Quadratically Broken Symmetry, *Ann. Phys. (N.Y.)* **116** 1–34 (1978)(A).
104. C. De Dominicis, L. Peliti: Field Theory Renormalization and Critical Dynamics above  $T_c$ : Helium, Antiferromagnets and Liquid-Gas Systems, *Phys. Rev. B* **18** 353–376 (1978)(A).
105. C. De Dominicis, S.-K. Ma, L. Peliti: Critical Dynamics near Dimension Two for Time-Dependent Ginzburg-Landau Models, *Phys. Rev. B* **15** 4313–4317 (1977)(A).
106. C. De Dominicis, L. Peliti: Deviations from Dynamic Scaling in Helium and Antiferromagnets, *Phys. Rev. Lett.* **38** 505–508 (1977)(L).
107. C. Di Castro, G. Jona-Lasinio, L. Peliti: Variational Principles, Renormalization Group and Kadanoff’s Universality, *Ann. Phys. (N.Y.)* **87** 327–353 (1974)(A).
108. G. Parisi, L. Peliti: Critical Indices for the Spherical Model from Conformal Covariant Self-Consistency Conditions, *Phys. Lett.* **41A** 331–332 (1972)(L).
109. M. D’Eramo, G. Parisi, L. Peliti: Theoretical Predictions for Critical Exponents at the  $\lambda$ -Point of Bose Liquids, *Lett. N. Cim.* **2** 878–880 (1971)(L).
110. G. Parisi, L. Peliti: Calculation of Critical Indices, *Lett. N. Cim.* **2** 627–629 (1971)(L).

## Conference proceedings and contributions to collective works

*The type of publication is determined by the following code:* (I): invited contribution; (C): contribution; (E): erratum.

1. K. Proesmans, L. Peliti, and D. Lacoste: A case study of thermodynamic bounds for chemical kinetics, in: Katja Lindenberg, Ralf Metzler and Gleb Oshanin (Eds.): *Chemical Kinetics Beyond the Textbook* (New Jersey: World Scientific, 2019) p. 435-454, arXiv:1804.00859 (I)
2. Luca Peliti and Raúl Rechtman: Einstein's approach to Statistical Mechanics, in: S. Esposito (ed.): *Atti del XXXVI Convegno Annuale SISFA, Napoli 2016*, 339–346 (Pavia: Pavia U. P., 2017) (I).
3. Alberto Imparato and Luca Peliti: Work and heat probability distributions in out-of-equilibrium systems, *C. R. Physique* **8** 556–566 (2007) (I).
4. Y. Kafri, D. Mukamel, L. Peliti: Denaturation and unzipping of DNA: Statistical mechanics of interacting loops, *Physica A* **306** 39-50 (2002)(I).
5. J.-B. Fournier, P. Galatola and L. Peliti: On the effects of a nematic phase confined to a membrane, *Mol. Cryst. Liq. Cryst.* **332** 3049–3056 (1999)(I).
6. L. Peliti: Transitions in Evolutionary Dynamics, *Rivista di Biologia/Biology Forum*, **91** 312–314 (1998) (Proceedings of a Meeting on Theoretical Biophysics, Genova, January 23, 1998)(I).
7. L. Peliti, M. Sellitto: Aging in a Simple Model of a Structural Glass, in: A. Vulpiani, M. Serva, G. Parisi, L. Peliti, L. Pietronero (eds.): *International Conference on Disorder and Chaos in Honour of Giovanni Paladin*, Rome 1997, *J. Phys. France IV* **8** Pr6 49–56 (1998)(I).
8. L. Peliti: Shapes and Fluctuation in Membranes, in: H. Flyvbjerg, J. Hertz, M. H. Jensen, O. G. Mouritsen, K. Sneppen (eds.): *Physics of Biological Systems, From Molecules to Species* (Berlin: Springer Verlag, 1997) 171–188 (I).
9. L. Peliti: Fitness Landscapes and Evolution, in: T. Riste, D. Sherrington (Eds.): *Physics of Biomaterials: Fluctuations, Self-Assembly and Evolution* (Dordrecht: Kluwer, 1996) 287–308 (I).
10. L. Peliti: Amphiphilic Membranes, in F. David, P. Ginsparg, J. Zinn-Justin (Eds.): *Fluctuating Geometries in Statistical Mechanics and Field Theory*, Les Houches, Session LXII, 1994 (Amsterdam: Elsevier, 1996) 195–285 (R).
11. G. Duchateau, G. Weisbuch, L. Peliti: Emergence of Mutualism, in: W. Banzhaf, F. Eeckman (eds.): *Evolution as a Computational Process* (Berlin: Springer, 1995) 18–26 (C).
12. L. Peliti: Polymers in a Random Environment and Molecular Quasi-Species, in: Y. Rabin, R. Bruinsma (eds.): *Soft Order in Physical Systems* (New York: Plenum, 1994) 129–132 (C).

13. S. Franz, M. Sellitto, L. Peliti: Molecular Quasispecies and Spin Glasses, in: A. Erzan, Ö. Pekcan (eds.): *Recent Advances in Statistical Physics*, Proceedings of the Istanbul Summer School, *Tr. J. of Physics* 18 384–388 (1994) (I).
14. A. Ajdari, J. Prost, L. Peliti: “Pseudo-Casimir” Effect in Liquid Crystals, in: D. Beysens, N. Boccara, G. Forgács (eds.): *Dynamical Phenomena at Interfaces, Surfaces and Membranes*, Les Houches Series (Commack, N. Y.: Nova Science Publishers, 1993) 449–456 (C).
15. B. Derrida, L. Peliti: Evolution in a Flat Fitness Landscape, in: R. Livi, J.-P. Nadal, N. Packard (eds.): *Complex Dynamics*, Les Houches Series (Commack, N. Y.: Nova Science Publishers, 1992) 201–206 (C).
16. L. Peliti: Disordered Systems and Evolutionary Models, in: L. Peliti (ed.): *Biologically Inspired Physics*, NATO ASI Series in Physics, Vol. 263 (New York: Plenum, 1991) 339–345 (I).
17. C. Amitrano, L. Peliti, M. Saber: A Spin-Glass Model of Evolution, in: A. Perelson, S. A. Kauffman (eds.): *Molecular Evolution on Rugged Landscapes*, SFI Studies in the Sciences of Complexity, Vol. IX, (Reading, Mass.: Addison-Wesley) 27–38 (1991)(I).
18. L. Peliti: Fluctuations in Hexatic Membranes, in: E. Dubois-Violette, B. Pansu (eds.): *International Workshop on Geometry and Interfaces, Colloque de Physique*, supplément au *Journal de Physique*, Fasc. 23, **C7-1990** 297-307 (1990)(I).
19. L. Peliti: A Spin-Glass Model of Chemical Evolution, in: M. Deutsch, S. Havlin, M. Kaveh, Y. Yeshurun (eds.): *Frontiers in Condensed Matter Physics, Physica A* **168** 619–625 (1990)(I).
20. L. Peliti: Fluctuations in Solid and Hexatic Membranes, in : C. Itzykson, S. Kirkpatrick, G. Parisi, N. Sourlas, M.A. Virasoro (eds.): *Common Trends in Statistical Physics and Field Theory, Physics Reports* **184** 271–272 (1989)(I).
21. L. Peliti: Biogenesis: Complexity and Disorder, in: L. Peliti (ed.): *Disordered Systems and Biological Models*, CIF Series, Vol. 14 (Singapore: World Scientific, 1989) 163–176 (I).
22. L. Peliti: Universality Classes of Fluctuating Membranes, in: R. Jullien, L. Peliti, R. Rammal, N. Boccara (eds.): *Universalities in Condensed Matter*, Springer Proceedings in Physics 32 (Berlin, Heidelberg: Springer, 1988) 100–105 (I).
23. L. Peliti: A Simple Model of Molecular Evolution, in: H.E. Stanley, N. Ostrowsky (eds.): *Random Fluctuations and Pattern Growth: Experiments and Models* (Dordrecht: Kluwer, 1988) 325–328 (I).
24. L. Peliti: Fluctuations in Fluid and Hexatic Membranes, in: H.E. Stanley, N. Ostrowsky (eds.): *Random Fluctuations and Pattern Growth: Experiments and Models* (Dordrecht: Kluwer, 1988) 218–221 (I).
25. L. Peliti: Statistical Mechanical Models of the Emergence of Biological Order, in: R. Livi, S. Ruffo, S. Ciliberto, M. Buiatti (eds.): *Chaos and Complexity* (Singapore: World Scientific, 1988) 388–393 (I).

26. L. Peliti, D.R. Nelson: Elasticity of Crystalline and Hexatic Membranes, in: J. Meunier, D. Langevin, N. Boccara (eds.): *Physics of Amphiphilic Layers*, Springer Proceedings in Physics 21 (Berlin, Heidelberg: Springer, 1987) 106–112 (I).
27. S. Leibler, R. Lipowsky, L. Peliti: Curvature and Fluctuations of Amphiphilic Membranes in: J. Meunier, D. Langevin, N. Boccara (eds.): *Physics of Amphiphilic Layers*, Springer Proceedings in Physics 21 (Berlin, Heidelberg: Springer, 1987) 74–79 (I).
28. L. Peliti: Effective Rigidity of Membranes, in: H.E. Stanley (ed.): *Statistical Physics*, Proceedings of the International IUPAP Conference on Statistical and Thermal Physics, STATPHYS 16, *Physica A* **140** 269–277 (1986)(I).
29. L. Peliti, Zhang Y.-C.: Field Theory Approach to the Eden Model and Diffusion-Limited Aggregation, in: L. Pietronero, E. Tosatti (eds.) *Fractals in Physics* (Amsterdam: Elsevier, 1986) 269–272 (C).
30. L. Pietronero, L. Peliti: Survival Probability and Enhancement Factor in Polymer Statistics, in: L. Pietronero, E. Tosatti (eds.) *Fractals in Physics* (Amsterdam: Elsevier, 1986) 83–86 (C).
31. L. Peliti: Random Walks with Memory, in: L. Pietronero, E. Tosatti (eds.): *Fractals in Physics* (Amsterdam: Elsevier, 1986) 73–81 (I).
32. L. Peliti: Field Theories of Walks and Epidemics, in: H.E. Stanley, N. Ostrowsky (eds.): *On Growth and Form, Fractal and Nonfractal Patterns in Physics* (Dordrecht: Nijhoff, 1986) 265–272 (I).
33. L. Peliti: Self-Avoiding Walks, in: C. Itzykson, Y. Pomeau, N. Surlas (eds.): *Common Trends in Particle and Condensed Matter Physics*, *Phys. Reports* **103** 225–231 (1984)(I).
34. C. Castellani, C. Di Castro, L. Peliti: Localization in Ordered Systems, in: C. Castellani, C. Di Castro, L. Peliti (eds.): *Disordered Systems and Localization*, Lecture Notes in Physics 149 (Berlin, Heidelberg: Springer, 1981) 240–256 (C).
35. L. Peliti: Renormalization Group Calculations on Critical and Tricritical Dynamics applied to Helium, in: C.P. Enz (ed.): *Dynamical Critical Phenomena and Related Topics*, Lecture Notes in Physics 106 (Berlin, Heidelberg: Springer, 1979) 189–209 (I).
36. C. De Dominicis, L. Peliti: Transients in the Critical Dynamics of  $\text{He}^4$ , in: D. Cabib, C.G. Kuper, I. Riess (eds.): *Statistical Physics*, Proceedings of the International IUPAP Conference on Statistical and Thermal Physics, STATPHYS 13, *Annals Israel Phys. Soc.* **2** 420–423 (1978)(C).
37. G. Benettin, C. Di Castro, G. Jona-Lasinio, L. Peliti, A. Stella: On the Equivalence between Different Renormalization Groups, in: M. Lévy, P. Mitter (eds.): *New Developments in Quantum Field Theory and Statistical Mechanics* (New York, London: Plenum, 1977) 447–468 (C).

## Books

1. Luca Peliti: *Statistical Mechanics in a Nutshell* (Princeton: Princeton University Press, 2011).
2. L. Peliti: *Appunti di Meccanica Statistica* (Torino: Bollati-Boringhieri, 2003).
3. A. Vulpiani, M. Serva, G. Parisi, L. Peliti, L. Pietronero (eds.): *International Conference on Disorder and Chaos in Honour of Giovanni Paladin, J. Phys. France IV* **8** Pr6 (1998).
4. L. Peliti (ed.): *Biologically Inspired Physics*, NATO ASI Series B: Physics, Vol. 263 (New York: Plenum, 1991).
5. L. Peliti (ed.): *Disordered Systems and Biological Models*, CIF Series, Vol. 14 (Singapore, World Scientific, 1989).
6. R. Jullien, L. Peliti, R. Rammal, N. Boccarda (eds.): *Universalities in Condensed Matter*, Springer Proceedings in Physics 32 (Berlin, Heidelberg: Springer, 1988).
7. L. Peliti, A. Vulpiani (eds.): *Measures of Complexity*, Proceedings, Rome 1987, Springer Lecture Notes in Physics 314 (Berlin, Heidelberg: Springer, 1988).
8. C. Castellani, C. Di Castro, L. Peliti (eds.): *Disordered Systems and Localization*, Proceedings, Rome 1981, Springer Lecture Notes in Physics 149 (Berlin, Heidelberg: Springer, 1981).

## Works of discussion and popularization

1. L. Peliti: Towards a statistical mechanics of biological evolution? *Physics World* March 1994 24–25.
2. L. Peliti: Modèles statistiques de l'évolution darwinienne, *Bulletin de la Société Française de Physique* **88** 7–9 (1993).
3. L. Peliti: L'evoluzione prima della vita, *Sapere* **919** 9–21 (1989).
4. R. Livi, L. Peliti, S. Ruffo, A. Vulpiani: Sistemi complessi, *SE Scienza Esperienza* **44** 28–29 (1987).
5. L. Peliti, A. Vulpiani: Prefazione all'edizione italiana, in: B. Mandelbrot: *Gli oggetti frattali* (Torino: Einaudi, 1987) IX–XV.
6. L. Peliti: La memoria nasce dal disordine? *Sapere* **886** 27–33 (1986).
7. L. Peliti: Livelli di realtà, *Quale Energia* **11–12** 50–53 (1985).
8. L. Peliti, A. Vulpiani: Arrivano i frattali! *Sapere* **875** 21–28 (1985).
9. L. Peliti: Kenneth G. Wilson e la teoria delle transizioni di fase (Appunti per un'analisi critica), *Testi e Contesti* **9** 125–141 (1983).
10. L. Peliti: Qual è il metodo per definire il punto critico? *Il Globo*, 22.10.1982.

11. L. Peliti: Consacrazione rapida di un paradigma. Gli studi di K.G. Wilson, *il manifesto*, 21.10.1982.
12. L. Peliti: A proposito di “Sulla realtà dei quanti” di J.M. Jauch, *Testi e Contesti* **5** 135–141 (1981).
13. G. Parisi, L. Peliti: La meccanica statistica nella fisica teorica contemporanea, in: A. Baracca: *Manuale Critico di Meccanica Statistica* (Catania: CULC, 1981) 612–620.