

List of Publications,
Florian A. Scheck

(going backwards in time. A la recherche du temps perdu ... et retrouvé)

83. *Quantum gauge models without classical Higgs mechanism*
M. Dütsch, J. M. Gracia-Bondía, F. Scheck, J. C. Varilly
Eur. Phys. J. C (2010) 69: 599–621 MZ-TH/10-01, arXiv: 1001.0932 [hep-th]
82. *Renormalization in Quantum Field Theory: An Improved Rigorous Method*
S. Falk, R. Häußling, F. Scheck,
MZ-TH/09-02, J. Phys. A: Math. Theor. 43 (2010) 035401,
arXiv: 0901.2252 [hep-th]
81. *The Spin-Statistics Relation in Nonrelativistic Quantum Mechanics
and Projective Modules*
N.A. Papadopoulos, M. Paschke, A.F. Reyes, F. Scheck,
Annales Mathématiques Blaise Pascal **11** (2004) 205–220
80. *Sweeping the space of admissible quark mass matrices*
S. Falk, R. Häußling, , F. Scheck, Phys. Rev **D65** (2002) 093011-1 – 11
79. *Tau neutrinos from muon storage rings*
G. Barenboim, F. Scheck, Phys. Lett. **B485** (2000) 171 – 177
78. *CP-violation with three oscillating neutrino flavours*
G. Barenboim, F. Scheck, Phys. Lett. **B475** (2000) 95 – 103
77. *Oscillations, neutrino masses, and scales of new physics*
G. Barenboim, F. Scheck, Phys. Lett. **B461** (1999) 235 – 242
76. *Neutrino mixing and masses from long baseline and atmospheric oscillations,*
G. Barenboim, F. Scheck, Phys. Lett. **B450** (1999) 189 – 195
75. *Can (noncommutative) geometry accommodate leptoquarks?*
M. Paschke, F. Scheck, A. Sitarz, Phys. Rev. **D59** (1999) 035003-1 – 8
74. *Only three flavours*
G. Barenboim, F. Scheck, Phys. Lett. **B440** (1998) 332 – 338
73. *Leptonic generation mixing, noncommutative geometry, and solar neutrino fluxes*
R. Häußling, M. Paschke, F. Scheck, Phys. Lett. **B417** (1998) 312 – 319
72. *Triangular mass matrices and Cabibbo-Kobayashi-Maskawa mixing of quarks*
R. Häußling, , F. Scheck, Phys. Rev. **D57** (1998) 6656 – 6662
71. *A new analysis of the tippe-top: Asymptotic states and Liapunov stability*
St. Ebenfeld, F. Scheck, Ann. of Physics (N.Y.) **243** (1995) 195 – 217
70. *Quark mass matrices and generation mixing in the standard model with noncommutative
geometry*
R. Häußling, , F. Scheck, Phys. Lett. **B336** (1994) 477 – 486
69. *Algebraic connections on parallel universes*
R. Coquereaux, R. Häußling, , F. Scheck, Int. J. Mod. Phys. **A10** (1995) 89 –
98

68. *Models of electroweak interactions in noncommutative geometry: A comparison*
N.A. Papadopoulos, J. Plass, F. Scheck, Phys. Lett. **B324** (1994) 380 – 386
67. *Supersymmetry in the standard model of electroweak interactions*
R. Häußling, N.A. Papadopoulos, F. Scheck, Phys. Lett. **B303** (1993) 265 – 270
66. *Understanding of spontaneous symmetry breaking in a noncommutative geometry framework*
F. Scheck, in “Dynamics of Complex and Irregular Systems” (Ph. Blanchard et al., eds.), World Scientific (Singapore 1994) 112
65. *Muon physics: Survey*
F. Scheck, Z. Phys. **C56** (1992) 5 – 12
64. *Leptonic charged weak interactions: Status and prospects*
K. Mursula, F. Scheck, Report Series, Research Institute for High-Energy Physics, Helsinki, **HU-SEFT-19** (1991)
63. *Anomalies, Weinberg angle and a noncommutative geometric description of the standard model*
F. Scheck, Phys. Lett. **B284** (1992) 303 – 308
62. *Generalized gauge transformations and hidden symmetry in the standard model*
R. Coquereaux, R. Häußling, N.A. Papadopoulos, F. Scheck,
Int. J. Mod. Phys. **A7** (1992) 2809 - 2824
61. *SU(2|1) symmetry, algebraic superconnections and a generalized theory of electroweak interactions*
R. Häußling, N.A. Papadopoulos, F. Scheck, Phys. Lett. **B260** (1991) 125 – 130
60. *The theory of electroweak interactions described by SU(2|1) algebraic superconnections*
R. Coquereaux, G. Esposito-Farèse, F. Scheck,
Int. J. Mod. Phys. **A7** (1992) 6555 – 6593
59. *Geometric approaches to particle physics*
F. Scheck, Springer Tracts in Modern Physics **199** (1990) 202 – 216
58. *Structure of the space of reducible connections for Yang-Mills theories*
A. Heil, A. Kersch, N.A. Papadopoulos, B. Reifenhäuser, F. Scheck,
Journ. Geom. Phys. **7** (1990) 489 – 505
57. *Anomalies from non-free action of the gauge group*
A. Heil, A. Kersch, N.A. Papadopoulos, B. Reifenhäuser, F. Scheck,
Ann. of Phys. (N.Y.) **200** (1990) 206 – 215
56. *Anomalies from the point of view of G-theories*
A. Heil, A. Kersch, N.A. Papadopoulos, B. Reifenhäuser, F. Scheck, H. Vogel,
Journ. Geom. Phys. **6** (1989) 237 – 270
55. *Measurement of the integral asymmetry in μ -decay and implication for the W-ino mass*
I. Beltrami, H. Burkhard, R.D. von Dincklage, W. Fetscher, H.-J. Gerber, K.F. Johnson, E. Pedroni, M. Salzmann, F. Scheck, C. Witzig, V. Zacek,
Helv. Phys. Acta **60** (1987) 611 – 618

54. *Muon decay: Measurement of the integral asymmetry parameter*
I. Beltrami, H. Burkhard, R.D. von Dincklage, W. Fetscher, H.-J. Gerber, K.F. Johnson, E. Pedroni, M. Salzmann, F. Scheck,
Phys. Lett. **B194** (1987) 326 – 330
53. *G-theories and the geometric compactification scheme*
A. Heil, N.A. Papadopoulos, B. Reifenhäuser, F. Scheck,
Nucl. Phys. **B293** (1987) 445 – 460
52. *Scalar matter field in a fixed-point compactified five dimensional Kaluza-Klein theory*
A. Heil, N.A. Papadopoulos, B. Reifenhäuser, F. Scheck,
Nucl. Phys. **B281** (1987) 426 – 444
51. *Scalar particle - monopole scattering in Kaluza-Klein theory with fixed-point compactification*
A. Heil, N.A. Papadopoulos, B. Reifenhäuser, F. Scheck,
Phys. Lett. **B173** (1986) 149 – 153
50. *Amplitude and trace reduction using Weyl-Van der Waerden spinors: Pion pair decay $\pi^+ \rightarrow e^+e^-e^+\nu_e$*
A. Kersch, F. Scheck, Nucl. Phys. **B263** (1986) 475 – 492
49. *Muon decay: Measurement of the transverse positron polarization and general analysis*
H. Burkhard, F. Corriveau, J. Egger, W. Fetscher, H.-J. Gerber, K.F. Johnson, H. Kaspar, H.J. Mahler, M. Salzmann, F. Scheck,
Phys. Lett. **B160** (1985) 343 – 348
48. *The vector boson masses in the standard model: Hadronic contributions to the mass shifts from the ACD method*
N.A. Papadopoulos, J.A. Peñarrocha, F. Scheck, K. Schilcher,
Nucl. Phys. **B258** (1985) 1 – 17
47. *Perturbative and nonperturbative hadronic contributions to the W- and Z-masses*
N.A. Papadopoulos, J.A. Peñarrocha, F. Scheck, K. Schilcher,
Phys. Lett. **B149** (1984) 213 – 216
46. *Analysis of leptonic charged weak interactions*
K. Mursula, F. Scheck, Nucl. Phys. **B253** (1985) 189 – 204
45. *Light scalar neutrinos and muon decay*
W. Buchmüller, F. Scheck, Phys. Lett. **B145** (1984) 421 – 424
44. *Muon decay: Measurement of the positron polarization and implications for the spectrum shape parameter η , V-A and T-invariance*
H. Burkhard, F. Corriveau, J. Egger, W. Fetscher, H.-J. Gerber, K.F. Johnson, H. Kaspar, H.J. Mahler, M. Salzmann, F. Scheck,
Phys. Lett. **B150** (1985) 242 – 246
43. *Does the positron from muon decay have transverse polarization?*
F. Corriveau, J. Egger, W. Fetscher, H.-J. Gerber, K.F. Johnson, H. Kaspar, H.J. Mahler, M. Salzmann, F. Scheck, Phys. Lett. **B129** (1983) 260 – 264

42. *Weak interactions: Conservation laws, symmetries, Lorentz structure*
F. Scheck, Nucl. Phys. **A434** (1984) 487c
41. *Lorentz structure of leptonic weak interactions*
K. Mursula, M. Roos, F. Scheck, Nucl. Phys. **B219** (1983) 321 – 340
40. *Tests of quantum electrodynamics and of unified electroweak theories in atoms*
F. Scheck, Comments At. Mol. Phys. **11** (1982) 139 – 146
39. *Universality of lepton interactions*
F. Scheck, Lecture Notes in Physics **143** (1981) 11
38. *Measurement of the positron longitudinal polarization in muon decay*
F. Corriveau, J. Egger, W. Fetscher, H.-J. Gerber, K.F. Johnson, H. Kaspar, H.J. Mahler, M. Salzmann, F. Scheck, Phys. Rev. **D24** (1981) 2004 – 2007
37. *Neutrino masses from three-body decays*
J. Missimer, F. Scheck, R. Tegen, Nucl. Phys. **B188** (1981) 29 – 45
36. *Pion radiative decay $\pi^+ \rightarrow e^+\nu_e\gamma$ and anomalous weak currents*
F. Scheck, R. Tegen, Nucl. Phys. **A364** (1981) 209 – 218
35. *Commutators of second-class axial currents with normal weak currents and consequences for particle decays*
F. Scheck, R. Tegen, Z. Physik **C7** (1981) 111 – 120
34. *Quadrupole interactions in pionic and kaonic atoms*
J.H. Koch, F. Scheck, Nucl. Phys. **A340** (1980) 221 – 239
33. *Parity violating asymmetry in elastic electron-nucleus scattering due to weak neutral currents*
M. Fischer-Waetzmann, F. Scheck, Phys. Rev. **D21** (1980) 2510 2513
32. *Radiative muon capture on ^{12}C and ^{16}O*
F. Scheck, A. Wulschleger, Nucl. Phys. **A326** (1979) 325 – 351
31. *Radiative corrections to electron polarization in muon decay*
M.-T. Mehr, F. Scheck, Nucl. Phys. **B149** (1979) 123 – 136
E: Nucl. Phys. **B234** (1984) 547
30. *Nuclear spectroscopic quadrupole moments from muonic atoms*
W. Dey, P. Ebersold, H.J. Leisi, F. Scheck, H.K. Walter, A. Zehnder,
Nucl. Phys. **A326** (1979) 418 – 444
29. *Monopole and quadrupole strong interaction effects in pionic atoms of ^{175}Lu and ^{165}Ho*
P. Ebersold, P. Aas, W. Dey, R. Eichler, H.J. Leisi, W.W. Sapp, F. Scheck,
Nucl. Phys. **A296** (1978) 493 – 518
28. *Muon physics*
F. Scheck, Physics Reports **44** (1978) 187 – 248
27. *Particle physics and exotic atoms*
F. Scheck, Acta Physica Austriaca Suppl. **XVIII** (1977) 629 – 675

26. *Spectroscopic quadrupole moments from muonic atoms: Nuclear polarizability correction*
J. Martorell, F. Scheck, Nucl. Phys. **A274** (1976) 413 – 427
25. *Nuclear spectroscopic quadrupole moments from muonic atoms and related topics*
W. Dey, P. Ebersold, R. Engfer, H.J. Leisi, F. Scheck, H.K. Walter,
Journ. Phys. Soc. Japan **34** (1973) 355 – 361
24. *Electron polarization in polarized muon decay: Radiative corrections*
W.E. Fischer, F. Scheck, Nucl. Phys. **B83** (1974) 25 – 31
23. *On the radiative decays of pions*
F. Scheck, A. Wulschleger, Nucl. Phys. **B67** (1973) 504 – 517
22. *The pion-nucleus optical potential and mesic atoms*
F. Scheck, C. Wilkin, Nucl. Phys. **B49** (1972) 541 – 556
21. *Strong interaction quadrupole effects in pionic and kaonic atoms*
F. Scheck, Nucl. Phys. **B42** (1972) 573 – 588
20. *Muonic atoms*
J. Hüfner, F. Scheck, C.S. Wu, in
Muonic Physics (Academic Press, 1975), vol. I, 201 – 307
19. *K^- -nuclear interactions and yields of kaonic X-rays*
T.E.O. Ericson, F. Scheck, Nucl. Phys. **B19** (1970) 450 – 476
18. *Veneziano's model and Freedman-Wang daughter trajectories*
F. Scheck, Nuovo Cim. **63A** (1969) 1074 – 1086
17. *Shell model analysis of the magnetic hyperfine splitting in muonic Thallium*
R. Engfer, F. Scheck, Z. Phys. **216** (1968) 274 – 280
16. *Simple models for forward scattering amplitudes of strongly interacting particles*
F. Scheck, Nuovo Cim. **57A** (1968) 721 – 745
15. *Approximate scattering solutions of the Dirac equation for electron-nucleus processes in light nuclei*
F. Scheck, M. Stingl, Z. Physik **209** (1968) 93 – 110
14. *Possible test of current algebra sum rule in nuclear physics*
F. Scheck, L. Schülke, Phys. Lett. **B25** (1967) 526 – 529
13. *Electromagnetic mass splittings of mesons and baryons in the quark model*
A. Gal, F. Scheck, Nucl. Phys. **B2** (1967) 110 – 120
12. *Λ and Σ^0 production in peripheral reactions*
H.J. Lipkin, F. Scheck, Phys. Rev. Lett. **18** (1967) 347 – 348
11. *Electromagnetic properties of hadrons in the quark model*
H.R. Rubinstein, F. Scheck, R.H. Socolow, Phys.Rev. **154** (1967) 1608 – 1616
10. *Meson-baryon and baryon-baryon reactions in the quark model*
H.J. Lipkin, F. Scheck, H.Stern, Phys. Rev. **152** (1966) 1375 – 1382

9. *Neutral meson production cross sections and mixing angles in a quark model*
G. Alexander, H.J. Lipkin, F. Scheck, Phys. Rev. Lett. **17** (1966) 412 – 416
8. *A quark model for forward scattering amplitudes*
H.J. Lipkin, F. Scheck, Phys. Rev. Lett. **16** (1965) 71 – 75
7. *Giant resonances in the $s - d$ shell and their electromagnetic properties*
W.H. Bassichis, F. Scheck, Phys. Rev. **145** (1966) 771 – 778
6. *Time-dependent Hartree-Fock treatment of the $E1$ -giant resonances in ^{24}Mg*
W.H. Bassichis, F. Scheck, Phys. Lett. **19** (1965) 509 – 511
5. *The possibility of studying the dipole-giant resonances in heavy deformed nuclei by means of high-energy electrons*
F. Scheck, Nucl. Phys. **77** (1966) 577 – 608
4. *Zum Einfluß der Schalenstruktur der Kerne auf die Spektren der Mesonenatome*
H. Marschall, F. Scheck, Z. Physik **178** (1964) 413 – 417
3. *Zur elastischen Streuung hochenergetischer Elektronen an ^{209}Bi*
F. Scheck, Z. Physik **175** (1963) 264 – 270
2. *Mesonenatom-Experimente und Schalenstruktur*
W. Greiner, F. Scheck, Nucl. Phys. **41** (1963) 424 – 434
1. *Zur Kernpolarisierbarkeit in Mesonenatomen: Die Polarisierbarkeit von Leuchtnukleonen am Beispiel des ^{209}Bi -Mesonenatoms*
F. Scheck, Z. Physik **172** (1963) 239 – 257

Invited talks at conferences

Many invited talks at conferences and schools such as Istanbul 1966 (NATO Summer School), Leysin 1969 (SIN), Valencia 1970 (GIFT Seminar), Zuoz 1972 (SIN School), Aix-en-Provence, 1972, Erice 1974, Victoria 1976 (TRIUMF), Copenhagen 1975, Zurich 1975, Schladming 1977, Schleching 1977, Breukelen 1977 (NIKHEF), Arolla 1980 (SIN), ECAP Heidelberg 1981, Jávea (Alicante) 1982, Freiburg 1984, PANIC Heidelberg 1985, Savonlinna 1985, Mainz 1986 (EHF), Paris 1988, Dourdan 1990, Heidelberg 1991, Bielefeld 1992, Hesselberg 1999, Hesselberg 2002, Villa de Leyva, Colombia, 2009, Bogota 2010.

Book Publications Florian A. Scheck

1. *Leptons, Hadrons, and Nuclei*
North Holland Publishing Company, Amsterdam 1983
2. *Electroweak and Strong Interactions*
Springer-Verlag, Heidelberg 2012, Third edition
3. *Mechanics – From Newton's Laws to Deterministic Chaos*
Springer-Verlag, Heidelberg 1990, 2nd ed. 1994, 3d ed. 1999, 4th edition 2005,
5th edition 2007
4. *Theoretische Physik 1:
Mechanik – Von den Newton'schen Gleichungen zum deterministischen Chaos*
Springer-Verlag, Heidelberg 1988, 1990, 1992, 1994, 1996, 1999, 2003, 2007
5. *Theoretische Physik 2:
Nichtrelativistische Quantentheorie – Vom Wasserstoffatom zu den Vielteilchen-
systemen*
Springer-Verlag, Heidelberg 1999. 2. Auflage 2005
6. *Theoretische Physik 3:
Klassische Feldtheorie – Von Elektrodynamik, nicht-Abel'schen Eichtheorien und
Gravitation*
Springer-Verlag, Heidelberg 2003, 2. erweiterte Auflage 2005, 3. erweiterte Au-
flage 2007
7. *Theoretische Physik 4:
Quantisierte Felder – Von den Symmetrien zur Quantenelektrodynamik*
Springer-Verlag, Heidelberg 2001, 2. erweiterte Auflage 2007
8. *Theoretische Physik 5:
Statistische Theorie der Wärme*
Springer-Verlag, Heidelberg 2008
9. *Quantum Physics*
Springer-Verlag, Heidelberg 2007

Books as Co-editor

- *The European Hadron Facility: various proposals and documents 1984 – 1986*
- *Rigorous Methods in Particle Physics*
S. Ciulli, F. Scheck, W. Thirring (eds)
Springer Tracts in Modern Physics 119
- *Noncommutative Geometry
and the Standard Model of Elementary Particle Physics*
F. Scheck, H. Upmeyer, W. Werner (eds.)
Lecture Notes in Physics, Springer-Verlag, Heidelberg 2002