

# Publications

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**Abstract.** This is a list of all my publications until January 2010. The list starts by a grouping according to type:

1. Publications in refereed scientific journals
2. Publications in non-refereed scientific periodicals
3. Articles in conference proceedings
4. Books
5. Articles on popular physics
6. Preprints

**1. Publications in refereed scientific journals**

1-7, 9-16, 18-20, 22, 24-25, 27-28, 32-38, 41-44, 46-54, 56, 58-63, 65-71, 74-78, 81-86, 88, 91-102, 105-108, 110-114, 116-117, 119-121, 126, 128, 129, 131, 133-137, 139, 141-142, 144, 148, 150-155, 157, 162-163, 165

**2. Publications in non-refereed scientific periodicals**

8, 17, 146

**3. Articles in conference proceedings**

21, 23, 26, 29-31, 40, 55, 64, 72-73, 80, 87, 89-90, 103-104, 109, 118, 124, 132, 138, 143, 145, 147, 149, 158-161, 164

**4. Books**

39 (chapter), 45, 57, 79 (chapter), 115, 125, 140, 156, 166 (chapter)

**5. Articles on popular physics**

122-123, 127, 130

**6. Preprints**

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**References**

- [1] M. Roos, "On the Fermi age of neutrons in iron and stainless steel," *J. Nuclear Energy* **7**, 225 (1958).
- [2] M. Roos, "Sources of gamma radiation in a reactor core," *J. Nuclear Energy, part B: Reactor Technology* **1**, 98 (1959).
- [3] M. Roos, "Approximate gamma ray flux calculations outside a reactor core," *Acta Polytekn. Scand.* **Ph 4**, 273 (1960).
- [4] M. Roos, "Low-energy  $K^-$ -nucleon scattering and odd ( $\Sigma\Lambda$ ) parity," *Arkiv för fysik* **20**, 539 (1961).
- [5] M. Roos, "Optimal  $K^- - p$  scattering conditions for resolving Dalitz'  $a^+$  and  $a^-$  solutions," *Nuovo Cimento* **24**, 657 (1962).
- [6] M. Roos, "Reinterpretation of the  $\zeta$  events," *Phys. Letters* **3**, 242 (1963).
- [7] M. Roos, "Tables of Elementary Particles and Resonant States," *Rev. Mod. Phys.* **35**, 314 (1963).
- [8] M. Roos, "Kausalitetsproblemet," *Sv. Tekn. Vetenskapsakad. i Finland, Meddel. Nr.* **21/2** (1963).
- [9] M. Roos, "Tables of Elementary Particles and Resonant States, November 1963," *Phys. Letters* **8**, 1 (1964).
- [10] M. Roos, "Data on Elementary Particles and Resonant States, November 1963," *Nucl. Phys.* **52**, 1(1964).
- [11] N. Brene, B. Hellesen and M. Roos, "Comparison of Cabibbo weak currents with experiment," *Phys. Letters* **11**, 344 (1964).
- [12] A. H. Rosenfeld *et al.*, "Data on Elementary Particles and Resonant States," *Rev. Mod. Phys.* **36**, 977 (1964).
- [13] M. Roos, "On the Construction of a Unitary Matrix with Elements of Given Moduli," *J. Math. Phys.* **5**, 1609 (1964) [and Erratum *ibid* **6**, 1354 (1965)].

- [14] B. Laurent and M. Roos, “On the Superposition Principle and  $CP$  Invariance in  $K^0$  decay,” *Phys. Letters* **13**, 269 (1964) [and Erratum *ibid* **15**, 104 (1965)].
- [15] A. H. Rosenfeld *et al.*, “Data on Particles and Resonant States,” *Rev. Mod. Phys.* **37**, 633 (1965).
- [16] B. Laurent and M. Roos, “On the Principle of Superposition in  $K^0$  decays,” *Nuovo Cimento* **XL A**, 788 (1965).
- [17] M. Roos, “Starkt sönderfallande elementarpartiklar,” *Fysisk Tidskrift* **63**, Nr. 2-3, 1 (1965).
- [18] M. Roos, “Direct tests of  $CP$  invariance,” *Phys. Letters* **20**, 59 (1966).
- [19] N. Brene, L. Veje, M. Roos and C. Cronström, “Leptonic decays of hadrons,” *Phys. Rev.* **149**, 1288 (1966).
- [20] M. Roos, “Studies of the Principle of Superposition in Quantum Mechanis,” *Comm. Phys. Math. Soc. Sci. Fennica* **33**, 1 (1966).
- [21] A. H. Rosenfeld *et al.*, “Data on Particles and Resonant States,” *Proc. XIII Int. Conf. on High Energy Phys.*, Univ. of California Press, Berkeley, USA, p. 331 (1967).
- [22] A. H. Rosenfeld *et al.*, “Data on Particles and Resonant States,” *Rev. Mod. Phys.* **39**, 1 (1967).
- [23] M. Roos, “The status of  $CP$  invariance in  $K^0 \rightarrow \pi^+\pi^-$  decays,” *Acta Phys. Acad. Sci. Hung.* **22**, 77 (1967).
- [24] M. Roos, “Rho Meson Structure,” *Nucl. Phys.* **B2**, 615 (1967).
- [25] A. H. Rosenfeld *et al.*, “Data on Particles and Resonant States,” *Rev. Mod. Phys.* **40**, 77 (1968).
- [26] A. H. Rosenfeld *et al.*, “Data on Particles and Resonant States,” *Proc. Heidelberg Int. Conf. on Elementary Particles*, North-Holland Publ. Co., Amsterdam, p. 499 (1968).
- [27] N. Brene, M. Roos and A. Sirlin, “Status of the Cabibbo theory,” *Nucl. Phys.* **B6**, 255 (1968).
- [28] J. Pišút and M. Roos, “Rho Meson Shape,” *Nucl. Phys.* **B6**, 325 (1968).
- [29] J. Leitner and M. Roos, “Binning and Resolution,” *Hadrons and their interactions*, Academic Press, New York, p. 511 (1968).
- [30] N. Barash-Schmidt *et al.*, “Tables of particle properties,” *Proc. 14th Int. Conf. on High-Energy Phys.* CERN, Geneva, p. 521 (1968).
- [31] N. Barash-Schmidt *et al.*, “Tables of meson properties,” *Meson Spectroscopy*, W. A. Benjamin Inc., New York, p. 585 (1968).
- [32] N. Barash-Schmidt *et al.*, “Tables of particle properties,” *Rev. Mod. Phys.* **41**, 109 (1969).
- [33] T. Brunila, M. Roos and J. Pišút, “Test of a relativistic many-channel resonance formula,” *Nucl. Phys.* **B9**, 461 (1969).
- [34] M. Roos and J. Pišút, “Pion form factor and rho meson width,” *Nucl. Phys.* **B10**, 563 (1969).
- [35] L. Dubal and M. Roos, “Structure in the  $\pi\pi$  System at 480 MeV,” *Nucl. Phys.* **B12**, 146 (1969).
- [36] A. Barbaro-Galtieri *et al.*, “Review of particle properties,” *Rev. Mod. Phys.* **42**, 87 (1970).
- [37] M. Roos, “Meson trajectories,” *Lett. Nuovo Cimento* **3**, 257 (1970).
- [38] M. Roos *et al.*, “Review of particle properties,” *Phys. Letters* **33 B**, 1 (1970).
- [39] G. Ebel *et al.*, “Compilation of Coupling Constants and Low Energy Parameters,” *Springer Tracts in Modern Physics* **55**, 239 (1970).
- [40] M. Roos, “Omega-rho interference in strong interactions,” *Acta Phys. Acad. Sci. Hung.* **31**, 215 (1972).
- [41] M. Roos and A. Sirlin, “Remarks on the radiative corrections of order  $\alpha^2$  to muon decay and the determination of  $G_\mu$ ,” *Nucl. Phys.* **B29**, 296 (1971).
- [42] A. Rittenberg *et al.*, “Review of particle properties,” *Rev. Mod. Phys.* **43**, No 2, Supplement, S1 (1971).
- [43] M. Roos, “Heuristic prescription for a renormalized Cabibbo theory,” *Phys. Letters* **36 B**, 130 (1971).
- [44] G. Ebel *et al.*, “Compilation of Coupling Constants and Low Energy Parameters,” *Nucl. Phys.* **B33**, 317 (1971).
- [45] W. T. Eadie *et al.*, “Statistical methods in experimental physics,” North-Holland Publ. Co, Amsterdam (1971).
- [46] P. Soeding *et al.*, “Review of Particle Properties” [Particle Data Group], *Phys. Lett. B* **39**, 1 (1972).
- [47] J. Pišút, M. Roos, J. Boháčik and P. Lichard, “False Peaks and Resonance Narrowing due to Variable Resolution,” *Nucl. Phys.* **B51**, 365 (1973).
- [48] T. A. Lasinski *et al.*, “Review of Particle Properties ” [Particle Data Group], *Rev. Mod. Phys.* **45**, S1 (1973).
- [49] V. Chaloupka *et al.*, “Review of Particle Properties” [Particle Data Group], *Phys. Lett.* **50 B**, 1 (1974).
- [50] M. Roos, “Cabibbo Universality, Renormalization, and the Z Vector Boson Mass,” *Nucl. Phys.* **B77**, 420

- (1974).
- [51] M. Roos, M. Hietanen and J. Luoma, "A New Procedure for Averaging Particle Properties," *Phys. Fenn.* **10**, 21 (1975).
  - [52] C. Montonen, M. Roos and N. Tornqvist, "Meson Mass Relations and Mixing in  $U(4) \times U(4)$ ," *Lett. Nuovo Cim.* **12**, 627 (1975).
  - [53] V. Chaloupka *et al.*, "Review of Particle Properties - Supplement to 1974 Edition" [Particle Data Group], *Rev. Mod. Phys.* **47**, 535 (1975).
  - [54] M. Roos, "Inelastic Pion Form-Factor and the Rho Meson Width," *Nucl. Phys.* **B97**, 165 (1975).
  - [55] C. Montonen, M. Roos and N. A. Törnqvist, "Meson mass relations in broken  $SU(4)$  with nearly ideal mixing." *Proc. Neutrino 75*. Hungarian Phys. Soc. **II**, 219 (1975).
  - [56] F. James and M. Roos, "MINUIT, A System for Function Minimization and Analysis of the Parameter Errors and Correlations." *Comput. Phys. Comm.* **10**, 343 (1975).
  - [57] W. T. Eadie *et al.*, "Statisticheskie metody v eksperimental'noi fizike." Atomizdat, Moscou (1976).
  - [58] T. G. Trippe *et al.*, "Review Of Particle Properties" [Particle Data Group], *Rev. Mod. Phys.* **48**, S1 (1976) [Erratum-ibid. **48**, 497 (1976)].
  - [59] M. Roos, "A Heavy Lepton Mechanism Yielding Electrons In p p Collisions At High-Energies," *Phys. Lett.* **61 B**, 457 (1976).
  - [60] S. Mehrotra and M. Roos, "Five Meson VDM Fits To The Nucleon Form-Factors," *Phys. Scripta* **13**, 265 (1976).
  - [61] S. Nussinov, R. Raitio and M. Roos, "A Model With Unconfined Psi Constituents," *Phys. Rev. D* **14**, 211 (1976).
  - [62] I. Liede, J. Maalampi and M. Roos, "Meson - Baryon Four-Body Reaction Amplitudes In Exact  $SU(4)$ ," *Lett. Math. Phys.* **1**, 211 (1976).
  - [63] C. Montonen and M. Roos, "Who Needs More than Four Quarks?," *Phys. Lett.* **66 B**, 61 (1977).
  - [64] C. Montonen and M. Roos, " $SU(2)_{Weak} \times U(1)$  Classification of the Weak and Electromagnetic Interactions of Leptons and Hadrons." *Proc. Hadron constituents and symmetries, Smolenice, Czechoslovakia*. Slovak Akad. Sciences, Bratislava, p. 95 (1978).
  - [65] T. G. Trippe *et al.*, "New Particle Searches and Discoveries. A Supplement to the 1976 Edition of 'Review of Particle Properties'," *Phys. Lett.* **68 B**, 1 (1977).
  - [66] M. Roos, "A Compilation Study of the Omega Mass," *Lett. Nuovo Cim.* **19**, 419 (1977).
  - [67] I. Liede, J. Maalampi and M. Roos, "Some Properties of Heavy Lepton Families," *Nucl. Phys.* **B134**, 339 (1978).
  - [68] M. Chaichian, R. Kögerler and M. Roos, "Gluon Exchange and the Short Distance Form of The Hadron - Anti-Hadron Potential," *Nucl. Phys. B* **141**, 110 (1978).
  - [69] C. Bricman *et al.*, "Review of Particle Properties" [Particle Data Group], *Phys. Lett.* **75 B**, 1 (1978).
  - [70] I. Liede, J. Maalampi and M. Roos, " $SU(2)_L \times SU(2)_R \times U(1)$  Gauge Models Confronting Neutral Current Data," *Nucl. Phys.* **B146**, 157 (1978).
  - [71] M. Roos and I. Liede, "Neutral Current Couplings and  $SU(2) \times U(1)$  Gauge Models," *Phys. Lett.* **82 B**, 89 (1979).
  - [72] J. Maalampi, M. Roos and I. Liede, "Extension of the Validity of the Bernabeu-Jarlskog Relations among Neutral Current Couplings," *Proc. Neutrino '79, Bergen, Norway*. Univ. of Bergen, p. 670 (1979).
  - [73] I. Liede and M. Roos, "A neutral current evaluation of the standard model," *Proc. Neutrino '79*. Univ. of Bergen, p. 309 (1979).
  - [74] I. Liede and M. Roos, "Implications of the Neutral Current Data for the Standard Model and for Grand Unification," *Nucl. Phys.* **B167**, 397 (1980).
  - [75] M. Roos and N. Törnqvist, "Pseudoscalars and Vector Mesons in a Unitary and Selfconsistently Broken  $SU(6)_W$  Scheme," *Z. Phys. C* **5**, 205 (1980).
  - [76] M. Roos and A. Pellinen, "A Compilation Study of the Phi Mass," *Lett. Nuovo Cim.* **27**, 321 (1980).
  - [77] F. James and M. Roos, "Errors on Ratios of Small Numbers of Events," *Nucl. Phys.* **B172**, 475 (1980).
  - [78] R. L. Kelly *et al.*, "Review Of Particle Properties" [Particle Data Group], *Rev. Mod. Phys.* **52**, S1 (1980).
  - [79] M. Roos, "Alkeishiukkasten maailma – kvarkeista aikojen alkuun". Suom. fyysikkoseura ja Tähtitiet. yhd. Ursa, Helsinki, p. 119 (1980)
  - [80] M. Chaichian, M. Roos and M. Hayashi, "First Order QCD Corrections to  $Z_0$  Production in p p and Anti-p

- p Collisions,” *Proc. of the extended triangle meeting Hadron Structure '80, Quantum Chromodynamics, Smolenice, Czechoslovakia*. VEDA Publ. House, Bratislava, p.131 (1982).
- [81] M. Chaichian, M. Hayashi and M. Roos, “ $Z^0$  Production in Hadronic Collisions with QCD Corrections,” *Phys. Rev. D* **26**, 1076 (1982).
- [82] A. Pellinen and M. Roos, “A Precision Determination of the Phi Meson Mass,” *Phys. Scripta* **25**, 599 (1982).
- [83] J. Maalampi, K. Mursula and M. Roos, “Study of the V,A Structure of the Charged Leptonic Current,” *Nucl. Phys.* **B207**, 233 (1982).
- [84] M. Roos *et al.*, “Review of Particle Properties” [Particle Data Group], *Phys. Lett.* **111 B**, 1 (1982).
- [85] K. Mursula, M. Roos and F. Scheck, “The Lorentz Structure of Leptonic Charged Weak Interactions. 1,” *Nucl. Phys.* **B219**, 321 (1983).
- [86] K. Enqvist, K. Mursula and M. Roos, “Mirror Leptons,” *Nucl. Phys.* **B226**, 121 (1983).
- [87] K. Enqvist, K. Mursula and M. Roos, “Modified V,A Structure of Weak Currents and Mirror Leptons,” *Proc. of the 8th Int. Workshop on Weak Interactions and Neutrinos, Javea, Spain*. World Scientific, Singapore, p.459 (1983)
- [88] K. Enqvist, K. Mursula and M. Roos, “Mirror Fermions, Universality and the Beam Dump Experiment,” *Z. Phys. C* **21**, 133 (1983).
- [89] M. Roos, “On the Superposition Principle and its Physics Content,” *Symp. in honor of the 90th birthday of Louis De Broglie - Wave Particle Dualism, Perugia, Italy*. D. Reidel Publ. Co, Dordrecht, p.291 (1984).
- [90] K. Enqvist, J. Maalampi, K. Mursula and M. Roos, “Low-Energy Effects of Mirror Leptons,” *MPI-PAE/PTh 17/83 Europhysics Study Conf. on Electroweak Effects at High Energies, Erice, Italy*. Plenum Press, New York, p. 537 (1985).
- [91] M. Roos, “The First Mirror Leptons,” *Phys. Lett.* **135 B**, 487 (1984).
- [92] C. G. Wohl *et al.*, “Review of Particle Properties” [Particle Data Group], *Rev. Mod. Phys.* **56**, S1 (1984).
- [93] H. Leutwyler and M. Roos, “Determination of the Elements  $V_{us}$  and  $V_{ud}$  of the Kobayashi-Maskawa Matrix,” *Z. Phys. C* **25**, 91 (1984).
- [94] J. Maalampi and M. Roos, “Classification of Neutrino Oscillations In The Presence Of Mirror Fermions,” *Phys. Lett.* **146 B**, 333 (1984).
- [95] D. Fargion and M. Roos, “Mirror Neutrinos in Standard Cosmology,” *Phys. Lett.* **147 B**, 34 (1984).
- [96] M. Roos, “A Definition of Maximal CP Violation,” *Phys. Scripta* **31**, 315 (1985).
- [97] J. Maalampi, K. Mursula and M. Roos, “On The Possible Evidence for a Radiatively Decaying Neutrino,” *Phys. Rev. Lett.* **56**, 1031 (1986).
- [98] M. Aguilar-Benitez *et al.*, “Review of Particle Properties” [Particle Data Group], *Phys. Lett. B* **170**, 1 (1986).
- [99] K. Enqvist, J. Maalampi and M. Roos, “Down Quark Mixing in Superstring Models,” *Phys. Lett. B* **176**, 396 (1986).
- [100] J. Maalampi and M. Roos, “Flavour Mixing in the Presence of a Fourth Down Quark,” *Phys. Lett. B* **188**, 487 (1987).
- [101] J. Maalampi and M. Roos, “The Standard Model Confronted with  $B^0$  Anti- $B^0$  Mixing,” *Phys. Lett. B* **195**, 489 (1987).
- [102] M. Roos, “Neutrino Mass Determinations from the Supernova SN1987a Bursts,” *Europhys. Lett.* **4**, 953 (1987).
- [103] M. Roos, “Upper and Lower Neutrino Mass Limits from the SN1987a,” *Proc. 1987 EPS High Energy Physics Conf., Uppsala, Sweden*. Uppsala Univ., p.573 (1987).
- [104] M. Roos, “Radiative Massive Neutrino Decay,” *Proc. Neutrino Physics, Heidelberg, Germany*. Springer-Verlag, Heidelberg, p. 57 (1987).
- [105] M. Roos, “Reanalysis of the SN1987a Neutrino Time Distributions,” *Astron. Astrophys.* **201**, L44 (1988).
- [106] G. P. Yost *et al.*, “Review of Particle Properties” [Particle Data Group], *Phys. Lett. B* **204**, 1 (1988).
- [107] M. Roos, “On the Determination of the Neutrino Mass in Neutrino Astronomy,” *Astron. Astrophys.* **218**, 334 (1989).
- [108] J. Maalampi, J. T. Peltoniemi and M. Roos, “The Magnetic Moment of the Electron-Neutrino in Mirror Models,” *Phys. Lett. B* **220**, 441 (1989).

- [109] J. Maalampi and M. Roos, “Consequences of an Electron-Neutrino in the Few eV Range,” *Phys. Lett. B* **226**, 127 (1989) [*Nucl. Phys. Proc. Suppl.* **13**, 535 (1990)].
- [110] J. Maalampi and M. Roos, “Nonstandard Fermions at Lep,” *Z. Phys. C* **44**, 319 (1989).
- [111] J. Maalampi and M. Roos, “Distortion of the Cosmic Background Radiation by Radiative Neutrino Decay in *Phys. Lett. B* **229**, 388 (1989).
- [112] J. H. Kühn *et al.*, “Heavy Flavors,” MPI-PAE/PTh-49/89, CERN Report 89-08, **1**, 365 (1989).
- [113] J. Maalampi and M. Roos, “Physics Of Mirror Fermions,” *Phys. Rept.* **186**, 53 (1990).
- [114] J. Maalampi and M. Roos, “Determination of the *CKM* Matrix,  $m(T)$ , and the Pseudoscalar Parameters  $F_{B^0}$ ,  $B_{B^0}$  and  $B_K$ ,” *Part. World* **1**, 110 (1990) [*Part. World* **1**, 148 (1990)].
- [115] W. T. Eadie *et al.*, “Metody Statystyczne w fizyce doswiadczalnej. Panstwowe wydawnictwo naukowe, Warszawa (1989).
- [116] J. J. Hernandez *et al.*, “Review f Particle Properties” [Particle Data Group], *Phys. Lett. B* **239**, 1 (1990) [Erratum-*ibid.* *B* **253**, 524 (1991)].
- [117] M. Roos, “SU(3) Breaking in Hyperon Beta Decays,” *Phys. Lett. B* **246**, 179 (1990).
- [118] M. Roos and J. Maalampi, “The Astrophysics of Radiatively Decaying Left-Right Symmetric Neutrinos,” *2nd Int. Workshop on Neutrino Telescopes, Venice, Italy*. Univ. of Padova, p.311 (1990).
- [119] F. James and M. Roos, “Statistical Notes on the Problem of Experimental Observations near an Unphysical Region,” *Phys. Rev. D* **44**, 299 (1991).
- [120] J. Maalampi and M. Roos, “Cosmic neutrino radiation in the far ultraviolet and the E(6) model,” *Phys. Lett. B* **263**, 437 (1991).
- [121] K. Hikasa *et al.* “Review of particle properties.” [Particle Data Group], *Phys. Rev. D* **45**, S1 (1992) [Erratum-*ibid.* *D* **46**, 5210 (1992)].
- [122] M. Roos, “Lapland,” *Physics and experiments with linear colliders*. World Scientific, Singapore (1992).
- [123] M. Roos, “Was there a Big Bang?” SETI, Helsinki Finnish Artificial Intelligence Society, Publ. No. 9, Helsinki, p. 24 (1993).
- [124] M. Roos, “Search for neutrino radiation in the cosmic far UV and extreme UV: (Another frontier in neutrino astrophysics),” *Proc. 2nd Tallinn Symposium on Neutrino Physics, Lohusalu, Estonia*. Tartu, p. 80 (1993).
- [125] M. Roos, “Introduction to cosmology,” John Wiley et Sons, Chichester (1994)
- [126] L. Montanet *et al.*, “Review of particle properties” [Particle Data Group], *Phys. Rev. D* **50**, 1173 (1994).
- [127] M. Roos, “Maailman synty,” *SETI, vieraan älyn etsintä*. Ursa, Helsinki, p. 56 (1994).
- [128] M. Roos, “Are there radiatively decaying  $\approx 30$  eV neutrinos?” *Proc. Neutrino 94, Eilat, Israel*, *Nucl. Phys. B(Proc. Suppl.)* **38**, 324 (1995).
- [129] J. Maalampi and M. Roos, “Phenomenological determination of the beauty meson decay parameter  $f(b)$  and the CP violating angle  $\delta$ ,” *Z. Phys. C* **67**, 603 (1995).
- [130] M. Roos, “Varför tro på en Big Bang?” *Sphinx, yearbook 1995 of the Finnish Society of Sciences and Letters* Ser. B, Helsinki, p. 1 (1995).
- [131] S. Bowyer, M. Lampton, J. T. Peltoniemi and M. Roos, “Theoretical possibilities and observational constraints for radiatively decaying neutrinos with mass near 30 eV,” *Phys. Rev. D* **52**, 3214 (1995).
- [132] M. Roos, “Do massive neutrinos ionize intergalactic HI?” *IUA Conference: Examining the Big Bang and Diffuse Background Radiation, Hague, Netherlands*. Kluwer Academic, Dordrecht, p. 563 (1996).
- [133] M. Roos, S. Bowyer, M. Lampton and J. T. Peltoniemi, “Are there radiatively decaying approx. 30-eV neutrinos?,” *Nucl. Phys. Proc. Suppl.* **38**, 324 (1995).
- [134] N. A. Törnqvist and M. Roos, “Confirmation of the Sigma Meson,” *Phys. Rev. Lett.* **76**, 1575 (1996) [arXiv:hep-ph/9511210].
- [135] R. M. Barnett *et al.*, “Particle physics summary,” *Rev. Mod. Phys.* **68**, 611 (1996).
- [136] R. M. Barnett *et al.* “Review of particle physics” [Particle Data Group], *Phys. Rev. D* **54**, 1 (1996).
- [137] N. A. Törnqvist and M. Roos, “Reply to: Comment on \*Confirmation of the sigma meson\*,” *Phys. Rev. Lett.* **77**, 2333 (1996)
- [138] K. Enqvist, K. Huitu och J. Maalampi, Editors of “Neutrino '96”, *Proc. of the 17th Intl. Conf. on Neutrino Phys. and Astrophys.*, World Scientific, Singapore (1997)
- [139] M. Roos and S. M. Harun-or-Rashid, “The case for a cosmological constant,” *Astron. Astrophys.* **329**, L17 (1998)

- [140] M. Roos, "Introduction to cosmology, Second Edition" John Wiley et Sons, Chichester (1997)
- [141] N. Törnqvist and M. Roos, "Reply to: Comment on 'Confirmation of the sigma meson'," Phys. Rev. Lett. **78**, 1604 (1997).
- [142] C. Caso *et al.* "Review of particle physics" [Particle Data Group Collaboration], Eur. Phys. J. C **3**, 1 (1998).
- [143] M. Roos, "Theoretical possibilities and observational constraints for radiatively decaying neutrinos with mass near 30 eV", *New Worlds in Astroparticle Physics*, World Scientific, Singapore, p. 226 (1998)
- [144] J. Nevalainen and M. Roos, "Cepheid metallicity and Hubble constant," Astron. Astrophys. **339**, 7 (1998).
- [145] J. Nevalainen and M. Roos, "A combined value of the Hubble constant," Nucl. Phys. Proc. Suppl. **70**, 123 (1999).
- [146] M. Roos, "The rho meson: A historical essay," Acta Phys. Slov. **49**, VII (1999).
- [147] K. Huitu, H. Kurki-Suonio and J. Maalampi, Editors of "High Energy Physics 99", Proc. Intl. Europhys. Conf. on High Energy Phys. in Tampere, Finland. IoP Publishing, Bristol (2000).
- [148] F. Pompilio, S. M. Harun-or-Rashid and M. Roos, "A toroidal black hole for the AGN phenomenon," Astron. Astrophys. **362**, 865 (2000).
- [149] M. Roos and S. M. Harun-or-Rashid, "Determination of the dynamical parameters of the Universe and its age." *Int. Conf. on High Energy Phys. 99, Tampere, Finland*, IoP, Bristol, p. 921 (2000).
- [150] D. E. Groom *et al.* "Review of particle physics" [Particle Data Group Collaboration], Eur. Phys. J. C **15**, 1 (2000).
- [151] S. A. Bludman and M. Roos, "Smooth energy: Cosmological constant or quintessence?," Astrophys. J. **547**, 77 (2001).
- [152] S. M. Harun-or-Rashid and M. Roos, "Statistical evaluation of the observational information on  $\Omega_m$  and  $\Omega_\Lambda$ ," Astron. Astrophys. **373**, 369 (2001).
- [153] S. A. Bludman and M. Roos, "Quintessence cosmology and the cosmic coincidence," Phys. Rev. D **65**, 043503 (2002).
- [154] K. Hagiwara *et al.* "Review of particle physics" [Particle Data Group Collaboration], Phys. Rev. D **66**, 010001 (2002).
- [155] T. S. Coleman and M. Roos, "Effective degrees of freedom during the radiation era," Phys. Rev. D **68**, 027702 (2003).
- [156] M. Roos, "Introduction to cosmology, Third Edition" John Wiley et Sons, Chichester (2003)
- [157] S. Eidelman *et al.* "Review of particle physics" [Particle Data Group Collaboration], Phys. Lett. B **592**, 1 (2004).
- [158] M. Roos, "Summary of the XXXIX Rencontres de Moriond", in Proc. of the XXXIXth Rencontres de Moriond "Exploring the Universe", Eds. Yannick Giraud-Héraud and Jean Trân Thanh Vân, Thê Gioí Publishers, 447 (2004)
- [159] M. Roos, "Are two kinds of dark matter seen in Galactic gamma rays?", arXiv:astro-ph/0501055 and *Proc. XXXIX Ann. Conf. of the Finnish Phys. Soc.*, Helsinki Univ. of Technology, Finland, p. 90 (2005).
- [160] M. Roos, "Best median values for cosmological parameters", in Proc. of the XLIIst Rencontres de Moriond "Contents and structures of the Universe", Eds. C. Magneville, R. Ansari, J. Dumarchez and Jean Trân Thanh Vân, Thê Gioí Publishers, 38 (2006)
- [161] T. Enqvist *et al.*, "EMMA - A New Underground Cosmic-Ray Experiment", J. Phys. Conf. Ser. **39**, 478 (2006)
- [162] T. Enqvist *et al.*, "EMMA - A new underground cosmic-ray experiment", Phys. Atom. Nucl. **70**, 166 (2007)
- [163] D. Autiero *et al.*, "Large underground, liquid based detectors for astro-particle physics in Europe: scientific case and prospects". JCAP, **11** (2007) 011
- [164] M. Roos, "Chaplygin gas in decelerating DGP gravity", Proc. of the XLIIIst Rencontres de Moriond "2008 Cosmology", Eds. J. Dumarchez, Y. Giraud-Héraud and Jean Trân Thanh Vân, Thê Gioí Publishers (2008) 341
- [165] M. Roos, "Chaplygin gas in decelerating DGP gravity and the age of the oldest star", Phys. Letters B **666**, 420 (2008)
- [166] M. Roos, "Expansion of the Universe - Standard Big Bang Model", UNESCO Encyclopedia of Life Supporting Systems (EOLSS), Part "Earth and Atmospheric Sciences", Chapter 5.

- [167] M. Roos, “Dark Matter: The evidence from astronomy, astrophysics and cosmology”, preprint arXiv:1001.0316[astro-ph.CO]