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All Refereed Publications (December 2007)

Journal Papers (in antichronological order)

120. SG Kong, HD Chen, WL Fan, J Wigger, A Torda and HC Lee
Genomes: at the edge of chaos with maximum information capacity
[\[ArXiv:0708.1598v1 \[q-bio.GN\]\]](#) (2007, submitted)

119. J Wigger, SG Kong, HD Chen, WL Fan, HC Lee and A Torda
Numerical models of genome growth ([PDF](#)) (2007, submitted)

118. Chi-Yuan Tseng, Jun-Ping Yu and HC Lee
Integrity of H1 helix in prion protein revealed by molecular dynamic simulations to be especially vulnerable to changes in the relative orientation of H1 and its S1 flank
[\[ArXiv:q-bio.BM/0603033 v1 \[q-bio.BM\]\]](#) (2007, submitted)

117. HC Lee
Genome - The Blind Copier
[Natural Science Newsletter \(NSC\) 18 \(2006\) 120-123.](#)

116. Zi-Hao Wang, MH Chang, JW Yang, JJ Sun, HC Lee and Bai-Chuang Shyu
Intra-cortical complexities revealed in the primary somatosensory cortex of rats
[Brain Research 1082 \(2006\) 102-114.](#)

115. Dominique Chu, Jonathan Rowe, and HC Lee
"Evaluation of the Current Models for the Evolution of Bacterial DNA Uptake Signal Sequences"
[Journal of Theoretical Biology 238 \(2006\) 157-166.](#)

114. Hong-Yi Bai, Chih-Yuan Tseng and HC Lee
Identifying Biomagnetic Sources in the Brain by the Maximum Entropy Approach
[AIP Conf. Proc. 803, 527-534 \(2005\)](#)

113. Dominique Chu, HC Lee and Tom Lenaerts
"Emergence of Uptake Sequence in Bacterial DNA"
[Artificial Life 11 \(2005\) 317-338.](#)

112. CH Chang, LC Hsieh, TY Chen, HD Chen, LF Luo and HC Lee
"Shannon Information in Complete Genomes"
[J. Bioinfo. & Comp. Biology 3 \(2005\) 587-608.](#)

111. HD Chen, CH Chang, LC Hsieh and HC Lee
"Divergence and Shannon information in genomes"
[Phys. Rev. Lett. 94 \(2005\) 178103.](#)

110. TY Chen, LC Hsieh and HC Lee
"Shannon Information and Self-Similarity in Complete Genomes"
[Computer Phys. Comm. 169 \(2005\) 218-221.](#)

109. Junjie Shen, Shuyu Zhang, Hoong-Chien Lee and Bailin Hao
"SeeDNA: visualization of K-string content of long sequences and their random counterparts"
[Genomics, Proteomics and Bioinformatics 2 \(2004\) 192-197.](#)

108. TY Chen, LC Hsieh, CH Chang, LF Luo, FM Jia and HC Lee
"Universal lengths in complete microbial genomes"
[Int. J. Mod. Phys. B 18 \(2004\) 2448-2454.](#)

107. M. Bakkali, TY Chen, HC Lee and RJ Redfield
"Evolutionary stability of uptake signal sequence in the Pasteurellaceae"
[Proc. Nat. Acad. Science \(USA\) 101 \(2004\) 4513-4518.](#)
106. L.S. Hsieh, Ta-Yuan Chen, Chang-Heng Chang, Wen-Lan Fan and H.C. Lee
"Universality in large-scale structure of complete genomes"
[Genome Biology, 5 \(2004\) 7.](#)
105. L.F. Luo, L.C. Hsieh, F.M. Ji, M.W. Jia and H.C. Lee
"Search for Evolution-Related-Oligonucleotides and Conservative Words in rRNA Sequences"
[IEEE Proc. Comp. Sys. Bioinformatics, \(2003\) 468-469](#)
104. L.C. Hsieh, L.F. Luo and H.C. Lee
"Evidence for Growth of Microbial Genomes by Short Segmental Duplications"
[IEEE Proc. Comp. Sys. Bioinformatics, \(2003\) 474-475](#)
103. L.S. Hsieh, L.F. Luo and H.C. Lee
"Short Segmental Duplication: Parsimony in Growth of Microbial Genomes"
[Genome Biology, 4 \(2003\) 7.](#)
102. L.S. Hsieh, L.F. Luo and H.C. Lee
"Genomes are large systems with small-system statistics: Segmental duplication in the growth of microbial genomes"
[AAPPS Bulletin, 13 \(2003\) 22-27](#)
101. L.S. Hsieh, L.F. Luo, F.M. Ji and H.C. Lee
"Minimal model for genome evolution and growth"
[Phys. Rev. Letts, 90 \(2003\) 018101-104](#)
100. L.S. Hsieh and H.C. Lee
"Model for growth of bacterial genomes"
[Mod. Phys. Lett. 16 \(2002\) 821-827](#)
99. ZH Wang, CC Simon Lin and HC Lee
Elementals on Protein and Amino Acids
[Physics Bimonthly, 24 \(2002\) 320-327.](#) (in Chinese)
98. C.T. Shih, Z.Y. Su, J.F. Gwan, B.L. Hao, C.H. Hsieh, J.L. Lo and H.C. Lee
Geometric and Statistical Properties of the Mean-Field HP Model, the LS Model and Real Protein Sequences
[Phys. Rev. E65 \(2002\) 41923-41933.](#)
97. HC Lee
Residual Interaction in Protein
[Natural Science Comm. \(NSC\) 13 \(2001\) 133-135.](#) (in Chinese)
96. PG Luan, HC Lee and RB Zhang
Colored solutions of Yang-Baxter equation from representations of $U_q \mathfrak{gl}(2)$
[J. Math. Phys. 41 \(2000\) 6529-6544.](#)
95. Z.H. Wang and H.C. Lee
Origin of driving force for protein folding,
[Phys. Rev. Lett. 84 \(2000\) 574-577.](#)
94. C.T. Shih, Z.Y. Su, J.F. Guan, B.L. Hao, C.H. Hsieh and H.C. Lee
The Mean-Field HP Model, Designability and Alpha-Helices in Protein Structure
[Phys. Rev. Lett. 84 \(2000\) 386-389.](#)
93. HC Lee
The Human Genome Project - New playground for science in the 21st century
[Physics Bimonthly 22 \(2000\) 297-300.](#) (in Chinese)

92. H.C. Lee and R.B. Zhang,
Geometry and representation of the quantum supergroup $OSP_q(1|2n)$
J.Math. Phys. 40 (1999) 3175-3190.
91. B.L. Hao, H.C. Lee and S.Y. Zhang,
Fractal related to long DNA sequences and complete genomes
[Chaos, Solitons and Fractals](#), 11 (2000) 825-836.
90. H.C. Lee, C.T. Chen and B. Rosenstein,
"Phase diagram of crystals of dusty plasma"
[Phy. Rev. E56](#) (1997) 4596-4607.
89. W.F. Chen, H.C. Lee and Z.Y. Zhu,
"Quantum holonomy in three-dimensional general covariant field theory and link invariant"
[Phys. Rev. D56](#) (1997) 1170-1174.
88. H.C. Lee and B. Rosenstein
"Phase diagram of dusty plasma"
[Phy. Rev. E55 \(Brief Report\)](#) (1997) 7805-7808.
87. W.F. Chen, H.C. Lee and Z.Y. Zhu,
"Differential regularization of topological massive and Yang-Mills theory and Chern-Simons theory"
[Phys. Rev. D55](#) (1997) 3664-3673.
86. R.B. Zhang and H.C. Lee
"Lickorish invariant and quantum $OSP(1|2)$ "
Mod. Phys. Letts. A11 (1996) 2397-2406.
85. M. Chaichian, W.F. Chen and H.C. Lee
"Differential Regularization of Chern-Simons Spinor and Scalar Electrodynamics"
Phys. Lett. B409 (1997) 325-328.
84. H.C. Lee
"Universal tangle invariant and commutants of quantum algebras"
[J. Phys. A: Math. Gen.](#) 29 (1996) 393-425.
83. H.C. Lee
"Yang-Baxter equation and related topics in physics and mathematics
(in Chinese),
Nat. Sci. Newsletter 6 (1994) 97-100.
82. H.C. Lee
"Commutants of quantum algebras and their application in physics"
Int. J. Mod. Phys. A Supp. 3A (1993) 275-279.
81. T.W. Chiu and H.C. Lee
"Quantum holonomy on a lattice"
Mod. Phys. Lett. A31 (1993) 2911-2918.
80. Y. Yu, Z.Y. Zhu and H.C. Lee
"Flat connections on quantum bundles and fractional statistics"
J. Math. Phys. 34 (1993) 988-994.
- H.C. Lee
"Invariants of quantum algebras and their application in physics"
Comm. Theo. Phys. 20 (1993) 371-374.
- W.D. Zhao and H.C. Lee
"Spontaneous breaking of topological symmetry"
[Phys. Rev. Lett.](#) 68 (1992) 1451-1454.
- H.C. Lee

"On Seifert circles and functors for tangles"
Int. J. Mod. Phys. Supp. B1 (1992) 581-610.

H.C. Lee
"Tangle invariants and centre of the quantum group"
Knots, Ed. A. Kawauchi, (Walter de Gruyter, 1992) 341-361.

H.C. Lee and Z.Y. Zhu,
"Quantum holonomy and link invariants"
Phys. Rev. D 44 (Rapid. Comm.) (1991) 942-945.

H.C. Lee
"Q-deformation of $sl(2, C) \times Z_N$ and link invariants"
NATO ASI Ser. 245 (Plenum, 1990) 359-372.

M. Couture, H.C. Lee and N.C. Schmeing,
"A new family of n-state representations of the braid group"
NATO ASI Ser. 238 (Plenum, 1990) 573-582.

H.C. Lee
"Tangles, links and twisted quantum groups"
NATO ASI Ser. 238 (Plenum, 1990) 623-655.

H.C. Lee
"Hopf algebra, complexification of $U_q(sl(2, C))$ and link invariants"
Fields, Strings & Quantum Gravity, Eds. H.Y. Guo et al. (Gordon & Breach, 1990) 91-110.

70. M. Couture, M.L. Ge and H.C. Lee
"New braid group representations of the B2, B2 and B4 types, their associated link polynomials and quantum R matrices"
J. Phys. A: Math. & Gen. 23 (1990) 4765.

M. Couture, M.L. Ge and H.C. Lee
"New braid group representations of the D2 and D3 types and their baxterization"
[**J. Phys. A: Math. & Gen.** 23 \(1990\)4751.](#)

G.J. Ni, S.Q. Chen and H.C. Lee
"One-dimensional coulomb gas and quark deconfinement"
Mod. Phys. Lett. A16 (1990)1265.

H.C. Lee
"The analytic, principal-value and landshoff prescription for axial gauges"
Physical & Nonstandard Gauges, Eds. Gaigg, Kummer & Schweda, (Springer-Verlag, 1990) 127-136.

G.J. Ni, S.Y. Lou, S.Q. Chen and H.C. Lee
"The Sine-Gordon formulation of two-dimensional coulomb gas revisited"
Phys. Rev. B41 (1990) 6947.

H.C. Lee, M.L. Ge, M. Couture and Y.S. Wu,
"Strange statistics, braid group representations and multipoint functions in the N-component model"
Int. J. Mod Physics A4 (1989) 2333-2368.

Z.Y. Zhu and H.C. Lee
"Scalar field and the Polyakov string"
Mod. Phys. Lett. A3 (1988) 1013.

H.C. Lee, Q. Ho-Kim and F.Q. Liu
"Supersymmetry anomalies and analytic regularization"
Can. J. Phys. 66 (1988) 419.

H.C. Lee and Q. Ho-Kim

"An analytic regularization for supersymmetry anomalies"
Super Field Theories, H.C. Lee, et al, Eds., (Plenum Press, 1987) 433.

H.C. Lee
"Quest for unification"
Phys. Canada 43 (1987) 123.

60. J.C. Taylor and H.C. Lee
"The light-cone gauge and finiteness of N=4 supersymmetric theory"
[Phys. Lett. 185B \(1987\) 363.](#)

M.S. Milgram and H.C. Lee
"Tables of divergent Feynman integrals. II. Light-cone gauge with the Mandelstam-Leibbrandt prescription"
J. Comp. Phys. 71 (1987) 316.

D.G.C. McKeon, T.N. Sherry, A.M. Chowdhury, H.C. Lee and M.S. Milgram
"Background field quantization and the light-cone planar gauge - counter-example of Kallosh's theorem"
Phys. Rev. D35 (1987) 660.

H.C. Lee, M.S. Milgram and A. Andradi
"The general three-vertex, BRS identities and renormalizability of the light-cone gauge"
Z. Phys. C33 (1986) 107.

G. Kunstatter, H.C. Lee and G. McKeon
"Unification of fundamental forces"
Phys. Canada 42 (1986) 15.

G. Kunstatter, H.C. Lee and P. Leivo
"Gauge dependence and the role of Weyl factor in the quantum effective potential in Kaluza-Klein theories"
Phys. Rev. D33 (1986) 1018.

H.C. Lee
"The light-cone gauge"
Can. J. Phys. 64 (1986) 624.

H.C. Lee and M.S. Milgram
"Two Yang-Mills theories in the light-cone gauge - complete one-loop counterterms"
[Nucl. Phys. B268 \(1986\) 543-572.](#)

H.C. Lee
"Yang-Mills theories in axial and light-cone gauges, analytic regularization and Ward identities"
Chn. J. Phys. 23 (1985) 90.

G. McKeon, S.B. Phillips, S.S. Samant, T.N. Sherry, H.C. Lee and M.S. Milgram
"Calculation of vacuum polarization in non-covariant gauges incorporating Nielsen-Kallosh ghosts"
Phys. Lett. 161B (1985) 319.

50. H.C. Lee and M.S. Milgram
"Anomalous ultraviolet divergences and renormalizability of the light-cone gauge"
[Phys. Rev. Lett. 55 \(1985\) 2122.](#)

H.C. Lee and M.S. Milgram
"Light-cone gauge in the principal-value prescription - Ward identities in Yang-Mills theories"
Z. Phys. C28 (1985) 579.

H.C. Lee and M.S. Milgram
"On the axial gauge: Ward identities and the separation of infrared and ultraviolet singularities"

by analytic regularization"
J. of Math. Phys. 26 (1985) 1793.

H.C. Lee and M.S. Milgram
"Tables of divergent Feynman integrals in the axial and light-cone gauges"
J. of Comp. Phys. 59 (1985) 331.

H.C. Lee and M.S. Milgram
"On the regularization of a class of divergent feynman integrals in covariant and axial gauges"
Ann. Phys. 157 (1984) 408.

Q. Ho-Kim and H.C. Lee
"Nearly massless pion in a modified bag model"
Phys. Rev. D29 (1984) 1455.

H.C. Lee and M.S. Milgram
"A new method for regulating Feynman integrals in the axial gauge"
[Phys. Lett. 134B \(1983\) 320.](#)

H.C. Lee and M.S. Milgram
"Exponent derivatives: An analytic technique for regulating nonlinear field equations"
Phys. Lett. 133B (1983) 320.

H.C. Lee and Q. Ho-Kim
"Bag model and the Nambu-Goldstone pion"
Phys. Lett. 125B (1983) 424.

H.C. Lee, Li Bing-An, Shen Qi-Xing, Zhang Mei-Man and Yu Hong,
"Electroweak interference effects in the high energy (e+e-) to (e+e-) + hadrons process"
Z. Phys. C. 16 (1982) 65-67.

40. H.C. Lee and Q. Ho-Kim
"Radiative pion(+)and Kaon(+) decays and the effective qq potential near the origin"
Phys. Lett. 119B (1982) 225.

H.C. Lee, Q.-X. Shen, M.-M. Zhang, H. Yu and B.-A. Li
"The QCD leading behaviour of the polarized photon structure functions and possible experimental test"
Nucl. Phys. B207 (1982) 301.

H.C. Lee and K.B. Winterbon
"Strangeness-changing nonlepton decays of the kaons, hyperons, and the Omega(-) particle"
Can. J. Phys. 60 (1982) 405.

H.C. Lee and Q. Ho-Kim
"Photon and gluon radiative weak decays and the inclusive decays of the charmed and bottom mesons"
Phys. Rev. D25 (1982) 287.

H.C. Lee and Q. Ho-Kim
"Decays of charmed mesons"
Phys. Rev. D25 (1982) 178.

A.N. Kamal, J.N. Ng and H.C. Lee
"Calculation of electroproduction of W bosons in electron-proton collisions in the Weizsacker-Williams approximation"
Phys. Rev. D24 (1981) 2842.

L.M. Krauss, H.C. Lee, A.C. McPherson and P.J.S. Watson
"New currents at CHEER"
Can. J. Phys. 59 (1981) 1754.

H.C. Lee and W.K. Cheng
"Electromagnetic and weak interactions in the nucleus"
Lecture Notes in Physics 144, T.T.S. Kuo & S.S.M. Wong, Eds. (Springer-Verlag, 1981)
354-565.

Q. Ho-Kim and H.C. Lee
"Gluon effects in charmed meson decays"
Phys. Lett. 100B (1981)420.

H.C. Lee
"Disintegration of the deuteron by reactor antineutrinos"
[Phys. Lett. 87B \(1979\) 18.](#)

30. H. Zarek, S. Yen, B.O. Pich, T.E. Drake, C.F. Williamson, S. Kowalski, C.P. Sargent, W. Chung, B.H. Wildenthal, M. Harvey and H.C. Lee
"Electroexcitation and the determination of the K-band structure in Magnesium 24"
Phys. Lett. 80B (1978) 26.

H.C. Lee
"Pion photo-production on nucleon and the hadron weak neutral current"
Phys. Lett. 86B (1979) 125.

H.C. Lee and S. Das Gupta
"Nuclear shape transitions at finite temperature"
Phys. Rev. C19 (1979) 2369.

F.C. Khanna, I.S. Towner and H.C. Lee
"Quenching of axial-vector coupling constant in the beta-decay of finite nuclei"
Nucl. Phys. A305 (1978) 349.

H.C. Lee
"Weak interaction and parity-nonconservation in the photo- and electro-disintegration of the deuteron near threshold"
[Phys. Rev. Lett. 41 \(1978\) 843.](#)

C.F. Williamson, F.N. Rad, S. Kowalski and J. Heisenberg, H. Crannel, J.T. O'Brien and H.C. Lee
"Electroexcitation of the ground-state rotational band in Fluorine 19"
[Phys. Rev. Lett. 40 \(1978\) 1702.](#)

M. Harvey, H.C. Lee and P. Amiot
"Renormalization for collective motion within a truncated space of the spherical shell model. II. Projected frame in a schematic model"
Ann. of Phys. 112 (1978) 1.

H.C. Lee
"Neutral current and the nuclear scattering of reactor antineutrinos"
[Nucl. Phys. A294 \(1978\) 473-491.](#)

H.C. Lee and F.C. Khanna
"Electromagnetic field in the nucleus and the Salam-Strathdee phase transitions"
Can. J. Phys. 56 (1978) 149.

H.C. Lee
"Unified theory of particle-phonon coupling - application to the Sb and in isotopes using a realistic interaction"
Nucl. Phys. A283 (1977) 457.

20. A.B. McDonald, E.D. Earle, M.A. Lone, F.C. Khanna and H.C. Lee
"Doubly radiative thermal neutron capture in deuterium and oxygen: experiment and theory"
Nucl. Phys. A281 (1977) 325.

H.C. Lee and F.C. Khanna
"The nuclear magnetic field, Cabibbo angle and CP violation in the nucleus"
Can. J. Phys. 55 (1977) 578.

A.B. McDonald, E.D. Earle, M.A. Lone, F.C. Khanna and H.C. Lee
"Doubly radiative neutron capture by Hydrogen 2, Helium 3, Oxygen 16 and Lead 208"
Phys. Lett. 65B (1976) 201.

H.C. Lee and F.C. Khanna
"Doubly radiative np capture"
Phys. Rev. C14 (1976) 1306.

H.C. Lee and F.C. Khanna
"Doubly radiative np capture and the electric dipole operator"
Phys. Lett. 61B (1976) 216.

H.C. Lee and E.D. Earle
"Detector cross registration in recent doubly radiative np capture measurements"
Nucl. Inst. & Meth. 131 (1975) 199.

H.C. Lee
"Electric transition strengths and (e,e') form factors for the first 2+ and 3- states in the even Sn isotope"
Nucl. Phys. A255 (1975) 86.

P. Amiot, M. Harvey and H.C. Lee
"A comment on band splitting in Magnesium 24"
Phys. Lett. B56 (1975) 26.

R.Y. Cusson and H.C. Lee
"Nuclear structure studies of Neon 20 and Magnesium 24 in the variation-after-projection Hartree-Fock method"
[Nucl. Phys. A211 \(1973\) 429.](#)

H.C. Lee and R.Y. Cusson
"Anti-centrifugal-stretching in Neon 20"
[Phys. Rev. Lett. 29 \(1972\) 1525.](#)

10. H.C. Lee
"Electron scattering form factors for Carbon 12 in the Hartree-Fock approximation"
Phys. Lett. 41B (1972) 421.

H.C. Lee
"Quadrupole and hexadecapole deformations of light nuclei in the Hartree-Fock approximation"
Nucl. Data, 34 Supp. (1973).

H.C. Lee and R.Y. Cusson
"Light nuclei systematics in the unrestricted hartree-fock approximation"
[Ann. Phys. 72 \(1972\) 353.](#)

H.C. Lee R.Y. Cusson
"Practical angular momentum projection method in multi-shell Hartree-Fock calculations: Sodium 22 as an example"
Phys. Lett. 39B (1972) 453-427.

H.C. Lee and R.Y. Cusson
"The nuclear neutron-proton rms radius difference"
Nucl. Phys. 170 (1971) 439.

H.C. Lee
"Ground-state correlations and the isobaric analog state"
[Phys. Rev. Lett. 27\(1971\) 200.](#)

F.C. Khanna, H.C. Lee and M. Harvey
"Effective operators for the nuclear shell model III: E2 effective charges with realistic reaction matrices"
Nucl. Phys. A164 (1971) 200.

H.C. Lee and K. Hara
"Blocking effect in nuclear pairing theory: An application to the Sn isotopes"
Phys. Rev. C3 (1971) 325.

S. Kahana, H.C. Lee and C.K. Scott
"A=18 nuclear reaction matrix"
[Phys. Rev. 185 \(1969\) 1378.](#)

S. Kahana, H.C. Lee and C.K. Scott
"Effect of Woods-Saxon wave functions on the calculation on A=18, 206 and 210 spectra with a realistic interaction"
[Phys. Rev. 180 \(1969\) 956.](#)

Books & Reports

H.C. Lee
"Physics, Geometry & Topology" (Book)
(Plenum, 1990), 681pp.

H.C. Lee
"Field theory in two dimensions and related topics" (Book)
(World Scientific, 1988), 444pp.

H.C. Lee
"Quantum field theory as an interdisciplinary basis" (Book)
(World Scientific, 1988), 462pp.

H.C. Lee
"Super Field Theories" (Book)
(Plenum, 1987), 560pp.

H.C. Lee
"An Introduction to Kaluza-Klein Theories" (Book)
(World Scientific, 1984), 320pp.

H.C. Lee
"Nuclear charge, convection current and magnetization current densities"
(Report)
Atomic Energy of Canada Report No. 4839 (1975) 112pp; 2nd printing (1981).

(End publications by HC Lee, March 2004)