

Publications du Laboratoire de Physique Théorique

Théorie des champs et symétries - systèmes intégrables - physique statistique

Symmetry and codon usage correlations in the genetic code

L. Frappat, P. Sorba and A. Sciarrino, Physics Letters A 259 (1999) 339

Four-point functions in $N=4$ supersymmetric Yang-Mills theory at two loops

B. Eden, P. S. Howe, C. Schubert, E. Sokatchev and P. C. West, Nuclear Physics B 557 (1999) 355-379

Deformed W_n algebras from elliptic $SL(N)$ algebras

J. Avan, L. Frappat, M. Rossi and P. Sorba, Com. Math. Physics 199 (1999) 697

Yangian realisations from finite W -algebras

E. Ragoucy and P. Sorba, Com. Math. Physics 203 (1999) 551

Central extensions of classical and quantum q -Virasoro algebras

J. Avan, L. Frappat, M. Rossi and P. Sorba, Physics Letters A251 (1999) 13

Universal construction of q - W algebras

J. Avan, L. Frappat, M. Rossi and P. Sorba, Com. Math. Physics 202 (1999) 445

Yangian symmetry in the non linear Schrodinger hierarchy

M. Mintchev, E. Ragoucy, P. Sorba and P. Zaug, Journal of Physics A32 (1999) 5885

A new approach to axial vector model calculations II

F. A. Dilkes, D. G. C. McKeon and C. Schubert, JHEP 03 (1999) 022

Universal solutions of quantum dynamical Yang-Baxter equations

D. Arnaudon, E. Buffenoir, E. Ragoucy and P. Roche, Letters Math. Physics 44 (1998) 201-214

New $W_{q,p}(sl(2))$ algebras from the elliptic algebra $A_{q,p}(sl(2)_C)$

J. Avan, L. Frappat, M. Rossi and P. Sorba, Physics Letters A 239 (1998) 27

A crystal base for the genetic code

L. Frappat, A. Sciarrino and P. Sorba, Physics Letters A250 (1998) 214

On non-linear superfield versions of the vector-tensor multiplet

E. Ivanov and E. Sokatchev, Physics Letters B 429 (1998) 35

Some remarks on topological 4d-gravity

F. Thuillier, Journal of Geometry and Physics 27 (1998) 3-4

Critical behaviour of the tandom field ising model

J.Y. Fortin and P.C.W. Holdsworth, Physics Letters A31 (1998) 85

Critical correlations of the 2-dimensional, 3-state Potts model

J. Mc Cabe and T. Wydro, Int. Journal of Modern Physics A13 (1998) 1013

A new approach to axial vector model calculations

D.G.C. McKeon and C. Schubert, Physics Letters B 440 (1998) 101-107

3-point functions in $N=4$ Yang-Mills

P.S. Howe, E. Sokatchev and P.C. West, Physics Letters B 444 (1998) 341-351

Integrable open boundary conditions for XXC models

D. Arnaudon and Z. Maassarani, JHEP 10 (1998) 024

Decoupling transformations in path integral bosonization

C.D. Fosco and J.C. Le Guillou, Nucl. Physics B535 (1998) 483

A note on the generalised Lie algebra $sl(2)_q$

D. Arnaudon, J. Physics A: Math. Gen. 31 (1998) 6647-6652

Algebraic approach to q -deformed supersymmetric variants of the Hubbard model with pair hoppings

D. Arnaudon, JHEP 12 (1997) 006

De Haas-van Alphen oscillations and magnetic breakdown: semiclassical calculation of multi-band orbits

J.Y. Fortin, J. Bellisard, M. Gusmão and T. Ziman, Phys. Rev. B57 (1998) 1484

Representatives of the Thom class of a vector bundle

M. Bauer and F. Thuillier, Journal of Geometry and Physics 25 (1998) 29

Aspects of $N_{T=3}$ 2 topological gauge theories and D-branes

M. Blau and G. Thompson, Nuclear Physics B492 (1997) 545

New super KdV system with the $N=4$ SCA as the hamiltonian structure

F. Delduc, L. Gallot and E. Ivanov, Physics Letters B396 (1997) 122

Correlators of the phase model

N.M. Bogoliubov, A.G. Izergin and N.A. Kitanine, Physics Letters A231 (1997) 347

Uniqueness of the Seiberg-Witten effective Lagrangian

R. Flume, M. Magro, L. O'Raifeartaigh, I. Sachs and O. Schnetz, Nuclear Physics B494 (1997) 331

$N=2$ KP and KdV hierarchies in extended superspace

F. Delduc and L. Gallot, Com. Math. Physics 190 (1997) 395

$d=2$, $N=2$ superconformal symmetries and models

F. Delduc, F. Gieres and S. Gourmelen, Classical and Quantum Gravity 14 (1997) 1623

Dispersion relations in doped CuO₂ planes

A.M. Daré and J.L. Richard, Phys. Rev. B55 (1997) 14614

Magnetic fluctuations in a finite two-dimensional XY model

P. Archambault, S.T. Branwell and P.C.W. Holdsworth, Journal of Physics A Math. Gen. 30 (1997) 8363

Anyonic realization of the quantum affine Lie superalgebra $U_q(A(M-1, N-1))$

L. Frappat, A. Sciarrino, S. Sciuto and P. Sorba, Journal of Physics A: Math. Gen. 30 (1997) 903

More on (4,4) supermultiplet in $SU(2) \times SU(2)$ harmonic superspace

E. Ivanov and A. Sutulin, Classical and Quantum Gravity 14 (1997) 843

Geometry of q-hypergeometric functions as a bridge between Yangians and quantum affine algebras

V. Tarasov and A. Varchenko, Invent. Maths 128 (1997) 501

Vassiliev knot invariants and Chern-Simons perturbation theory to all orders

D. Altschuler and L. Freidel, Com. Math. Physics 187 (1997) 261

The hyperbolic volume of knots from quantum dilogarithm

R.M. Kashaev, Letters Math. Physics 39 (1997) 269

Grassmannian Topological Kazama-Suzuki Models and Cohomology

M. Blau, F. Hussain and G. Thompson, Nuclear Physics B488 (1997) 599

Some general aspects of coset models and topological Kazama-Suzuki models

M. Blau, F. Hussain and G. Thompson, Nuclear Physics B488 (1997) 541

Interactions faibles / Interactions fortes*Two loop Compton and annihilation processes in thermal QCD*

P. Aurenche, F. Gelis, R. Kobes and H. Zaraket, Phys. Rev. D60 (1999) 076002

A new approach for the vertical part of the contour in thermal field theories

F. Gelis, Physics Letters B455 (1999) 205

A critical phenomenological study of inclusive photon production in hadronic collisions

P. Aurenche, M. Fontannaz, J.Ph. Guillet, B. Kniehl, E. Pilon and M. Werlen, Eur. Phys. Journal C9 (1999) 107

Gluon plasmon frequency near the light-cone

F. Flechsig, Nuclear Physics B547 (1999) 239

Ambiguities in the zero momentum limit of the thermal p^0 gg triangle diagram

F. Gelis, Phys. Rev. D59 (1999) 076004

Associated stop Higgs production at the linear collider and extraction of the stop parameters

G. Bélanger, F. Boudjema, T. Kon and V. Lafage, Eur. Phys. Journal C9 (1999) 511-520

New developments in the $1/N$ expansion and nonperturbative Higgs physics

T. Binoth and A. Ghinculov, Nuclear Physics B550 (1999) 77-98

Nonperturbative three-point functions of the $O(N)$ sigma model in the $1/N$ expansion at NLO

T. Binoth and A. Ghinculov, Physics Letters B450 (1999) 220-224

Perturbative and nonperturbative Higgs Signals

A. Ghinculov and T. Binoth, Acta Physica Polon. B 30 (1999) 99-105

Quark and gluon fragmentation functions into photons

L. Bourhis, M. Fontannaz and J.P. Guillet, Eur. Phys. Journal C2 (1998) 529

Higgs mass saturation effect and the LHC discovery potential

A. Ghinculov, T. Binoth and J.J. van der Bij, Physics Letters B427 (1998) 343-347

Factorization and soft-gluon divergences in isolated-photon cross sections

S. Catani, M. Fontannaz and E. Pilon, Phys. Rev. D 58 (1998) 094025

Physics with e^+e^- linear collider

G. Bélanger, F. Boudjema and working group, Physics Reports 299 (1998) 1

Bremsstrahlung and photon production in thermal QCD

P. Aurenche, F. Gelis, R. Kobes and H. Zaraket, Phys. Rev. D58 (1998) 085003

Cutting rules in the real time formalisms at finite temperature

F. Gelis, Nuclear Physics B508 (1997) 483

Cosmologie / Astrophysique des particules*Antimatter cosmic rays*

P. Chardonnet, P. Salati and R. Taillet, New Astronomy 4 (1999) 275-282

Microlensing optical depth of the large Magellanic cloud

E. Aubourg, N. Palanque-Delabrouille, P. Salati, M. Spiro and R. Taillet, Astronomy & Astrophysics 347 (1999) 850-859

Which fraction of the measured cosmic-ray antiprotons might be due to neutralino annihilation in the galactic halo ?

A. Bottino, F. Donato, N. Fornengo and P. Salati, Phys. Rev. D 58 (1998) 123503

Préprints LAPTH

Théorie des champs et symétries - systèmes intégrables - physique statistique

Shortening of primary operators in N -extended SCFT and harmonic-superspace analyticity

L. Andriopoli, S. Ferrara, E. Sokatchev and B. Zupnik, LAPTH-766/99, hep-th/9912007

Vacuum polarisation tensors in constant electromagnetic fields: Part I

C. Schubert, LAPTH-758/99,

Extremal correlators in four-dimensional SCFT

B. Eden, P. S. Howe, C. Schubert, E. Sokatchev and P. C. West, LAPTH-754/99, hep-th/9910150

Perturbation theory in radial quantization approach and the expectation values of exponential fields in sine-Gordon model

V. V. Mkhitarian, R. H. Poghossian and T. A. Sedrakian, LAPTH-752/99, hep-th/9910128

Explicit construction of nilpotent covariants in $N = 4$ SYM

P. S. Howe, C. Schubert, E. Sokatchev and P. C. West, LAPTH-746/99, hep-th/9910011

Cladistics of double Yangians and elliptic algebras

D. Arnaudon, J. Avan, L. Frappat, E. Ragoucy and M. Rossi, LAPTH-738/99, hep-th/9907190

Codon usage correlations and crystal basis model of the genetic code

M. L. Chiusano, L. Frappat, P. Sorba and A. Sciarrino, LAPTH-736/99

Simplifications of four-point functions in $N=4$ supersymmetric Yang-Mills theory at two loops

B. Eden, P. S. Howe, C. Schubert, E. Sokatchev and P. C. West, LAPTH-735/99, hep-th/9906051

On the radiatively induced CPT-Odd term in QED

C. D. Fosco and J. C. Le Guillou, LAPTH-731/99, hep-th/9904138

A quantum field theoretical representation of Euler-Zagier sums

U. Muller and C. Schubert, LAPTH-728/99

Deformed double Yangian structures

D. Arnaudon, J. Avan, L. Frappat and M. Rossi, LAPTH-716/99, math.QA/9905100

$N=2$ rigid supersymmetry with gauged central charge

N. Dragon, E. Ivanov, S. Kuzenko, E. Sokatchev and U. Theis, LAPTH-684/98

Explicit solution of the quantum three-body Calogero-Sutherland model

A. M. Perelomov, E. Ragoucy and P. Zaugg, LAPTH-681/98

A family of exactly solvable conformal models of quantum field theory in D dimensions

M. Ya. Palchik and E. S. Fradkin, LAPTH-677/98,

The superspace geometry of gravitational Chern-Simons forms and their couplings to linear multiplets: a review

G. Girardi and R. Grimm, LAPTH-673/98, hep-th/9801201

Interactions faibles/Interactions fortes

A full next to leading order study of direct photon pair production in hadronic collisions

T. Binoth, J. P. Guillet, E. Pilon and M. Werlen, LAPTH-760/99, hep-ph/9911340

Reduction formation for dimensionally regulated one-loop N -point integrals

T. Binoth, J. Ph. Guillet and G. Heinrich, LAPTH-759/99

Improved $B \rightarrow \pi u_i$ form factors from the lattice

K. C. Bowler, L. Del Debbio, J. M. Flynn, L. Lellouch, V. Lesk, C. M. Maynard, J. Nieves and D. G. Richard, LAPTH-757/99

KLN theorem, magnetic mass, and thermal photon production

P. Aurenche, F. Gélis and H. Zaraket, LAPTH-756/99, hep-ph/9911367

Large- p_T inclusive P^0 cross sections and next-to-leading-order QCD predictions

P. Aurenche, M. Fontannaz, J. Ph. Guillet, B. A. Kniehl and M. Werlen, LAPTH-751/99, hep-ph/9910252

Y' to Y' ratio in diffractive photoproduction

P. Hoyer and S. Peigné, LAPTH-749/99, hep-ph/9909519

The stealthy Higgs model at future linear colliders

T. Binoth and J. J. van der Bij, LAPTH-745/99

Bosonic quartic couplings at LEP 2

G. Bélanger, F. Boudjema, Y. Kurihara, D. Perret-Gallix and A. Semenov, LAPTH-744/99, hep-ph/9908254

Z radiation off stops at a linear collider

G. Bélanger, F. Boudjema, T. Kon and V. Lafage, LAPTH-740/99

Two-loop Euler-Heisenberg QED pair-production rate

G. V. Dune and C. Schubert, LAPTH-739/99, hep-th/9907190

Susy Higgs at the LHC: Large stop mixing effects and associated production

G. Bélanger, F. Boudjema and K. Sridhar, LAPTH-730/99, hep-ph/9904138

On the stability domain of systems of three arbitrary charges

A. Krikeb, A. Martin and J.M. Richard and Tai Tsun Wu, LAPTH-712/98, Physics/9812031

Semi-exclusive processes: new probes of hadron structure

S.J. Brodsky, M. Diehl, P. Hoyer and S. Peigné, hep-ph/9812277, LAPTH-708/98

The higgs sector of the minimal 3 3 1 model revisited

N.A. Tuan, N.A. Ky and H.N. Long, LAPTH-701/98, hep-ph/9810273

Testing nonperturbative techniques in the scalar sector of the standard model

T. Binoth and A. Ghinculov, LAPTH-694/98, hep-ph/9808497

Cosmologie/Astrophysique des particules

Detection of neutralino annihilation photons from external galaxies

E.A. Baltz, C. Briot, P. Salati, R. Taillet and J. Silk, astro-ph/9909112, LAPTH-763/99

Kinematics of LMC stellar populations and self-lensing optical depth

P. Salati, R. Taillet, E. Aubourg, N. Palanque-Delabrouille and M. Spiro, LAPTH-732/99, astro-ph/9904400

Extending the DAMA annual-modulation region by inclusion of the uncertainties in astrophysical velocities

P. Belli, R. Bernabei, A. Bottino, F. Donato, N. Fornengo, D. Prosperi and S. Scopel, LAPTH-727/99, hep-ph/9903501

Antideuterons as a signature of supersymmetric dark matter

F. Donato, N. Fornengo and P. Salati, LAPTH-722/99, hep-ph/9904481

Detection of neutralino annihilation photons from external galaxies

E. A. Baltz, C. Briot, P. Salati, R. Taillet and J. Silk, LAPTH-763/99

Communications dans des conférences, colloques ou écoles

Théorie des champs et symétries - systèmes intégrables - physique statistique

Semi classical aspects of gauge theories

R. Stora, Symposium in the honour of Wolfhart Zimmermann, June 22-24, 1998, Schloss Ringberg

Selected topics in perturbative field theory: renormalization, differential algebras

R. Stora, June 15-26, 1998, Les Houches, France

Universal construction of quantum dynamical R-matrices and a variant of the Hubbard model with pair hopping

D. Arnaudon, The 7th Colloquium on Quantum groups and integrable systems, Czech. J. Phys 48 n° 11 p. 1285, Prague, June 18-20, 1998

World line path integrals as a calculational tool in quantum field theory

M.G. Schmidt and C. Schubert, 6th International Conference on Path Integrals from peV to TeV : 50 years from Feynman's Paper, August 25-29, 1998, Florence, Italy

On the calculation of QED amplitudes in a constant field

C. Schubert, Workshop on Frontier Techs of QED & Physics of the vacuum, Sofia, Bulgaria, 1998

Axial vector amplitudes, second order fermions, and standard model photon - neutrino processes

C. Schubert, LAPTH-Conf-729/99, Corfu Summer Institute on Elementary Particle Physics, September 6-14, 1998

Mathematical methods in modern theoretical physics

M. Eliashvili, G. Jorjadze, G. Lavrelashvili, P. Sorba and A. Tavkhelidze, ISPM98, Tbilisi, September 5-18, 1998

A quantum group theoretical model for the genetic code

L. Frappat, A. Sciarrino and P. Sorba, I. S. P. M., Math. Methods in Theoretical Physics, Tbilisi, Georgia, 5-18 sept. 1998

A Hubbard model with pair hopping and on universal dynamical R-matrices

D. Arnaudon, APCTP-Nankai Symposium 1998 on «Yang-Baxter systems, non linear models and their applications», Seoul, October 20-23, 1998

Yangians, finite W-algebras and the non linear Schrodinger hierarchy

M. Mintchev, E. Ragoucy, P. Sorba and Ph. Zaugg, ACTP-Nankai Symposium Yang-Baxter systems, non linear models and their applications, Seoul, October 20-23, 1998

Deformed Virasoro and W algebras from elliptic algebras

P. Sorba, International seminar on integrable systems, MPI 99-39, Bonn, April 99

Happy Birthday Carlo

R. Stora, Meeting in Honour of Carlo M. Becchi's 60th Birthday, Cortona, Italie, May, 31-02, 1999

Deformed oscillators algebra formulation of the non-linear Schrodinger hierarchy and of its symmetry

E. Ragoucy, GGIS-99, Prague, Tchequie, June, 17-19, 1999

On elliptic algebras and double Yangians

D. Arnaudon, J. Avan, L. Frappat, E. Ragoucy and M. Rossi, The 8th Colloquium on Quantum groups and integrable systems, Prague, June 17-19, 1999

Crystal basis model of the genetic code: structure and consequences

L. Frappat, A. Sciarrino and P. Sorba, III Int. Conference Symmetry in Nonlinear @ Mathematical Physics, Kiev Ukraine, July 12-18, 1999

Interactions faibles / Interactions fortes

Physics at the Linear Collider

F. Boudjema, Fifth Workshop on High Energy Physics Phenomenology, Inter-University Centre for Astronomy and Astrophysics, Pune, India, January 12-26, 1998

Inverse neutrinoless double beta decay and $DL = 2$ processes at linear colliders

G. Bélanger, LAPTH-698/98, International Symposium on Lepton and baryon number violation, Trento, Italie, April 98.

Minimal ten-parameter Hermitian texture zeroes mass matrices and the CKM matrix

M. Baillargeon, F. Boudjema, C. Hamzaoui and J. Linding, MRST 98, Towards the theory of everything, Montreal, 13-15 May 1998

Quasi-real photon production in thermal QCD

F. Gelis, 5th International Workshop on Thermal-Field Theory and their applications, TFT 98, Regensburg, Germany, 10-14 August 1998

Soft dilepton production and hard thermal loops

H. Zaraket, 5th International Workshop on Thermal-Field Theory and their applications, TFT 98, Regensburg, Germany, 10-14 August 1998

Inclusive photon production in hadronic collision

M. Werlen, 34th Rencontre de Moriond, QCD and High energy hadronic interactions, Les Arcs, 20-27 mars 1999

Implementation of the non-linear gauge into Grace

G. Bélanger, F. Boudjema, J. Fujimoto, T. Ishikawa, T. Kaneko, K. Kato, V. Lafage, N. Nakazawa and Y. Shimizu, 6th AIHENP, University of Crete, April 1999

Cosmologie/Astrophysique des particules

Galactic antiprotons and supersymmetry

P. Salati, Dark 98, Heidelberg, July 20-24, 1998

Galactic antiprotons and supersymmetry

P. Salati, P. Chardonnet, F. Donato, D. Maurin, R. Taillet, A. Bottino and N. Fornengo, Paris, December 9-11, 1998

Cosmic rays from dark matter annihilations

P. Salati, invited talk at the TAUP99 Conference, Paris, September 6-10, 1999

The antiproton signal of the supersymmetric dark matter present in the galactic halo

P. Salati, 8th International Workshop on Neutrino Telescopes, Venezia, February 23-26, 1999

Cosmic-ray antideuteron as a signature for neutralino annihilation in the galactic halo

P. Salati, F. Donato and N. Fornengo, contribution to the 26th International Cosmic Ray Conference, Salt Lake City, USA, August 17-25, 1999

The extra-galactic gamma-ray signal of supersymmetric dark matter

P. Salati, E. A. Baltz, C. Briot, R. Taillet and J. Silk, contribution to the 26th International Cosmic Ray Conference, Salt Lake City, USA, August 17-25, 1999

Thèses de Doctorat

1998

Recherches de charginos et de neutralinos avec le détecteur L3 à LEP
CHEREAU Xavier, 30 avril 1998, LAPP-T-98/01

Étude de la production associée du boson de Higgs, $H_W, H_{\pm}, H_Z$ et $gg + e^\pm/m^\pm + X$ avec le détecteur ATLAS, auprès du LHC
EYNARD Guillaume, 6 mai 1998, LAPP-T-98/02

Étude de la violation de CP dans le canal $B^0 \rightarrow J/\psi K^0_s$ et développement d'un compteur Cerenkov à aérogel
LAFAYE Rémi, 11 mai 1998, LAPP-T-98/03

Conception d'un dispositif d'acquisition rapide de grande dynamique : application à la lecture du calorimètre de l'expérience ATLAS
BUSSAT Jean-Marie, 5 juin 1998, LAPP-T-98/04

Système optique d'alignement du banc de détection de l'expérience VIRGO pour la recherche des ondes gravitationnelles
SANNIBALE Virginio, 26 juin 1998, LAPP-T-98/05

Recherche de l'oscillation $n_m - n_e$ dans l'expérience NOMAD
VALUEV Viatcheslav, 7 juillet 1998, LAPP-T-98/06

Fonctions de corrélation en théorie des champs à température finie : aspects formels et applications au plasma de quarks et de gluons
GELIS François, 14 décembre 1998, ENSLAPP-T-98/07

1999

Mesure des corrélations de Bose-Einstein dans les désintégrations de paires de Bosons W avec le détecteur ALEPH au LEP
MARTIN Franck, 16 avril 1999, LAPP-T-99/01

Système de détection de l'expérience VIRGO
DEROME Laurent, 21 avril 1999, LAPP-T-99/02

Mesure des sections efficaces et des asymétries difermioniques avec le détecteur ALEPH à LEP2 - interprétations au-delà du modèle standard
MERLE Elsa, 22 avril 1999, LAPP-T-99/03

