

CURRICULUM VITAE

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Personal Information:

Name:	Klaus Kirsten
Place of Birth:	Trier (Germany)
Sex:	Male
Marital Status:	Married
Citizenship:	German, Permanent U.S. Resident

Present Appointment:

Since August 2006	Professor of Mathematics Baylor University, Waco, TX (USA)
Jan. 2003 – July 2006	Associate Professor of Mathematics Baylor University, Waco, TX (USA)

Previous Positions held:

Sept. 2001 – Dec. 2002	Post-doctoral Associate Max Planck Institute for Mathematics in the Sciences, Leipzig (Germany)
May 1999 – Aug. 2001	Research Associate University of Manchester (England)
May 1995 – April 1999	DFG Research Fellow (German Research Foundation) University of Leipzig (Germany)
Oct. 1993 – April 1995	Alexander von Humboldt Fellow University of Barcelona (Spain)
Oct. 1992 – Sept. 1993	Visiting Professor University of Trento (Italy)
Jan. 1989 – Sept. 1992	Teaching Assistant University of Kaiserslautern (Germany)

Scientific Qualifications:

January 17, 2000	Habilitation in Mathematical Physics University of Leipzig (Germany) <i>Spectral functions in mathematics and physics</i>
Jan. 1989 – Jan. 1992	Ph.D. in Theoretical Physics University of Kaiserslautern (Germany) <i>Effective actions – Asymptotic series expansions of functional determinants</i>
Jan. 1985 – Dec. 1988	Diplom (Diploma) in Theoretical Physics University of Kaiserslautern (Germany) Grade 1.1 (best possible: 1.0) Master Thesis in Theoretical Physics <i>Stress energy tensor renormalization using the Hadamard formalism in globally hyperbolic spacetimes</i>

Education:

Jan. 1985 – Dec. 1988	Hauptstudium (graduate study) in Theoretical Physics University of Kaiserslautern (Germany)
Sept. 1983 – Dec. 1984	Social Service, Trier (Germany)
Sept. 1981 – Aug. 1983	Grundstudium (undergraduate study) in Physics University of Kaiserslautern (Germany)

Primary School and High School:

1968 – 1981	05/29/1981 Abitur (A-level) Friedrich-Spee-Gymnasium, Trier (Germany)
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Honors and Memberships:

Since 2003	Member of the AMS (American Mathematical Society)
2006 – 2010	Member of the MAA (Mathematical Association of America)
1999 – 2001	EPSRC Fellowship (Engineering and Physical Sciences Research Council)
1995 – 1999	DFG Fellowship (German Research Foundation)
1995 – 1997	DFG Fellowship (German Research Foundation)
1995 – 2002	Member of the DPG (German Physical Society)
1993 – 1995	Alexander von Humboldt Fellowship
1989	Honor Prize for the best Master Thesis in Physics

Teaching

Teaching Experience:

Since January 2003	Instructor for Calculus for Business Students, Calculus I, Calculus II, Calculus III, Complex Analysis, Complex Variables, Introduction to Analysis, Ordinary Differential Equations, Partial Differential Equations, Applications of Complex Analysis, Differential Geometry Baylor University, Waco, TX (USA)
May 1999 – Aug. 2001	Tutor for second year students, Evaluation of vacation essays and written exams University of Manchester (England)
May 1995 – April 1999	Supervision of graduate students, Evaluation of written exams University of Leipzig (Germany)
Oct. 1996 – Feb. 1997	Lecture series for graduate students on <i>Zeta functional methods in mathematics and physics</i> University of Leipzig (Germany)
May 1996	Lecture series for graduate students on <i>Effective action at zero and finite temperature</i> University of Rome, La Sapienza (Italy)
November 1993	Lecture series for graduate students on <i>Applications of zeta function techniques in quantum field theories in curved spacetimes</i> University of Barcelona (Spain)
Oct. 1988 – Sept. 1992	Supervision of graduate students, Introductory mathematics courses, Evaluation of written exams University of Kaiserslautern (Germany)

Advisor for PhD thesis:

B. Streit, *Spectral zeta functions for ellipsoidal domains*, Baylor University, Waco, TX (USA), expected in 2015.

C. Graham, *Boundary condition dependence of spectral zeta functions*, Baylor University, Waco, TX (USA), 2015.

P. F. Morales-Almazán, *Spectral functions for generalized piston configurations*, Baylor University, Waco, TX (USA), 2012.

Advisor for Master thesis:

M. Coons, *General moment theorems with applications*, Baylor University, Waco, TX (USA), 2005.

(External) Referee of PhD thesis:

Y. Deng, *Reflection on general relativity from perspectives of black hole physics and Hořava-Lifshitz gravity*, Baylor University, Waco, TX (USA), 2015.

J. Stewart, *Spectral analysis of the exceptional Laguerre and Jacobi equations*, Baylor University, Waco, TX (USA), 2014.

J. A. Franco, *Global $SL(2, \mathbb{R})$ representation of the Schrödinger equation with time-dependent potentials*, Baylor University, Waco, TX (USA), 2012.

M. Frank, *A search for the standard model Higgs Boson produced in association with a W Boson*, Baylor University, Waco, TX (USA), 2011.

A. Bruder, *Applied left-definite theory, the Jacobi polynomials, their Sobolev orthogonality, and self-adjoint operators*, Baylor University, Waco, TX (USA), 2009.

J. W. Rogers, *Adaptive Methods for the Helmholtz Equation with Discontinuous Coefficients at an Interface*, Baylor University, Waco, TX (USA), 2007.

J. E. Ehrke, *A functional approach to positive solutions of boundary value problems*, Baylor University, Waco, TX (USA), 2006.

C. J. Kunkel, *Positive solutions of singular boundary value problems*, Baylor University, Waco, TX (USA), 2006.

M. Maroun, *Existence of positive solutions to singular right focal boundary value problems*, Baylor University, Waco, TX (USA), 2006.

D. Ma, *Uniqueness implies uniqueness and existence for nonlocal boundary value problems for fourth order differential equations*, Baylor University, Waco, TX (USA), 2005.

I. Drozdov, *Vacuum energy of quantum fields in classical background configuration*, University of Leipzig (Germany), 2003.

C. G. Beneventano, *Aplicaciones de funciones espectrales en teoria cuantica de campos*, Universidad Nacional de la Plata (Argentina), 2000.

(Translation of the title: *Applications of spectral functions in quantum field theory.*)

Research and Academic Standing

Funded Research Projects:

- 2012, University of Leipzig (Germany)
Vacuum energy in terms of phase shifts
DFG Project, Bo 1112/22-1 (German Research Foundation)
- 2008-2012, Baylor University, Waco, TX (USA)
The Casimir effect: Geometry and boundary condition dependence
Grant # PHY 0757791 of the National Science Foundation (USA), \$ 150 000
- 2007, Baylor University, Waco, TX (USA)
On the variation and the sign of the Casimir energy
Baylor University Summer Sabbatical
- 2006, Baylor University, Waco, TX (USA)
New exotic phenomena for zeta and eta functions on singular geometries
Baylor University Research Committee
- 2006, Baylor University, Waco, TX (USA)
Renormalization in the presence of edges and corners
Baylor University Summer Sabbatical
- 2005, Baylor University, Waco, TX (USA)

Renormalization in the presence of edges and corners

Baylor University Research Committee

- 2004, Baylor University, Waco, TX (USA)
The dependence of spectral functions on boundary conditions and geometry
Baylor University Summer Sabbatical
- 2004, University of Naples (Italy)
Quantum Gravity on Manifolds with Boundary
Exchange Program of the INFN (National Institute of Nuclear Physics)
- 2003, Baylor University, Waco, TX (USA)
Exotic boundary conditions
Baylor University Summer Sabbatical
- 1999 – 2001, University of Manchester (England)
Spectral asymptotics on Riemannian manifolds with piecewise-smooth boundaries
EPSRC Project, Grant No GR/M08714
(Engineering and Physical Sciences Research Council)
- 1997 – 1998, University of La Plata (Argentina)
Mathematical aspects of quantum field theory
Exchange Program of the Agencia Nacional de Promocion Cientifica y Tecnologica
(National Agency for the Promotion of Science and Technology)
- 1997 – 1999, University of Leipzig (Germany)
Ground state energies and higher loops in general background fields
DFG Project, Bo 1112/4-2 (German Research Foundation)
- 1997, University of Naples (Italy)
Boundary effects in quantum electrodynamics and quantum chromodynamics
Exchange Program of the INFN (National Institute of Nuclear Physics)
- 1995 – 1996, University of Trento (Italy)
Casimir effect and Bose-Einstein condensation
Exchange Program of the INFN (National Institute of Nuclear Physics)
- 1994 – 1996, University of Barcelona (Spain)
Vacuum polarisation in the presence of background fields

Exchange Program of the DAAD (German Academic Exchange Service)

- April 1995 – April 1997, University of Leipzig (Germany)
Ground state energies in general background fields
DFG Project, Bo 1112/4-1 (German Research Foundation)
- Oct. 1993 – April 1995, University of Barcelona (Spain)
Vacuum structures in quantum field theories
Feodor Lynen Program of the Alexander von Humboldt Foundation

Editorial activities

Editor of the Special Issue (together with F. Dowker and E. Elizalde) *Applications of zeta functions and other spectral functions in mathematics and physics: a special issue in honour of Stuart Dowker's 75th birthday*, J. Phys. A: Math. Theor. **45**, 2012, IOP Publishing.

Editor of the book (together with F. Williams) *A window into zeta and modular physics*, MSRI Publications, Volume **57**, 2010, Cambridge University Press.

Invitation as a plenary speaker to Summer Schools and Conferences:

Conference on *Mathematical structures in quantum systems and applications*, Benasque, Spain, July 8 – 14, 2012

- *Formulations and regularizations of the Casimir energy*
- *Examples for Casimir energy calculations*
- *Casimir energy for separate bodies and the TGTG representation*

Mathematical Sciences Research Institute Graduate Summer School on *A Window into Zeta and Modular Physics*, Berkeley, CA, USA, June 16 – June 27, 2008; lectures given on

- *Hurwitz, Barnes and Epstein zeta functions I*
- *Hurwitz, Barnes and Epstein zeta functions II*
- *Motivations, and the Casimir energy as an example of zeta function techniques*
- *Computation of functional determinants via contour integration*
- *Partition sums and zeta functions*

Korean Institute of Advanced Studies Summer School on *Dirac and Laplace Operators*, Seoul, Korea, July 9 – July 13, 2007; lectures given on

- *The evaluation of functional determinants*

- *The analysis of heat kernel asymptotics*
- *The influence of conical singularities on properties of spectral functions*

Reviewer for:

- Mathematical Reviews
- Zentralblatt für Mathematik

Organization of Research:

- April 5 – 6, 2014, Organization of the special session (together with I. Avramidi) *Topics in spectral geometry and global analysis* for the AMS 2014 Western Section Meeting, University of New Mexico, Albuquerque, NM (USA)
- March 30 – April 4, 2014, Organization of the session *Mathematical problems in Casimir physics* for the conference Casimir Physics 2014, Les Houches (France)
- October 27-28, 2012, Organization of the special session (together with L. Friedlander) *Spectral theory and global analysis* in the AMS 2012 Fall Western Sectional Meeting, University of Arizona, Tucson, AZ (USA)
- October 16 – 18, 2009, Organization of the special session (together with G. Berkolaiko, S. Fulling and J. Harrison) *Mathematical aspects of spectral problems related to physics* for the AMS 2009 Fall Central Section Meeting, Baylor University, Waco, TX (USA)
- June 16 – 29, 2008, Organization of the Summer Graduate Workshop (together with Prof. Floyd Williams) *A Window into Zeta and Modular Physics*, Mathematical Sciences Research Institute, Berkeley, CA (USA)
- August 18 – 23, 1996, Organization of the Conference (together with Dr. habil. M. Bordag) *The calculation of specific heat-kernel coefficients*, Mathematical Institute Oberwolfach, Oberwolfach (Germany)

Referee for:

- Abstract and Applied Analysis
- Acta Mathematicae Applicatae Sinica
- American Journal of Physics

- Annals of Physics
- Classical Quantum Gravity
- Communications in Mathematical Physics
- Differential Geometry and its Applications
- Egyptian Journal of Physics
- Europhysics Letters
- General Relativity and Gravitation
- International Journal of Modern Physics A
- International Journal of Functional Analysis, Operator Theory and Applications
- International Journal of Geometric Methods in Modern Physics
- Journal of Geometric Analysis
- Journal of Low Temperature Physics
- Journal of Mathematical Physics
- Journal of Physics A: Mathematical and Theoretical
- Journal of Physics B: Atomic, Molecular and Optical Physics
- Journal of Physics: Condensed Matter
- Journal of Physics: Conference Series
- Journal of Statistical Physics
- Journal of the London Mathematical Society
- Kodai Mathematical Journal
- Letters in Mathematical Physics
- Mathematische Nachrichten
- Nuclear Physics B
- Numerical Algorithms
- Physica A
- Physica B
- Physical Review A: Atomic, Molecular, and Optical Physics
- Physical Review B: Condensed Matter and Materials Physics
- Physical Review D: Particles, Fields, Gravitation, and Cosmology
- Physical Review E: Statistical, Nonlinear, and Soft Matter Physics
- Physical Review Letters
- Physica Scripta
- Physics Letters A
- Physics Letters B
- Review in Mathematical Physics
- Symmetry

- Book Referee for CRC Press
- Peer Reviewer for the Research Council of Norway
- Member of the Editorial Board of the Journal *Advances in Mathematical Physics*
- Member of the Scientific Advisory Committee for the Summer School on *New paths towards quantum gravity*, Roskilde University, Sominstationen in Holbaek, Denmark, May 12 – 16, 2008
- Member of the International Scientific Committee for the Casimir Physics 2014 conference, Les Houches, France, March 30 – April 4, 2014

List of Scientific Publications

Book:

- K. Kirsten, *Spectral functions in mathematics and physics*, Chapman&Hall/CRC Press, Boca Raton, FL, 2002.

Research Articles:

1. G. Fucci and K. Kirsten, *Expansion of infinite series containing modified Bessel functions of the second kind*, J. Phys. A: Math. Theor., to appear.
2. T. Zhu, A. Wang, G. Cleaver, K. Kirsten, Q. Sheng and Q. Wu, *Detecting quantum gravitational effects of loop quantum cosmology in the early universe*, ApJ **807** (2015) L17 (6pp).
3. G. Fucci, C. Graham and K. Kirsten, *Spectral functions for regular Sturm-Liouville problems*, J. Math. Phys. **56** (2015) 043503 (24pp).
4. T. Lu, T. Jeffres and K. Kirsten, *Zeta function of self-adjoint operators on surfaces of revolution*, J. Phys. A: Math. Theor. **48** (2015) 145204 (22pp).
5. J. M. Muñoz-Castañeda, K. Kirsten and M. Bordag, *QFT over the finite line. Heat kernel coefficients, spectral zeta functions and selfadjoint extensions*, Lett. Math. Phys. **105** (2015) 523-549.
6. M. Beauregard, M. Bordag and K. Kirsten, *Casimir energies in spherically symmetric background potentials revisited*, J. Phys. A: Math. Theor. **48** (2015) 095401 (14pp).
7. E. Elizalde, K. Kirsten, N. Robles and F. Williams, *Zeta functions on tori using contour integration*, Int. J. Geom. Meth. Mod. Phys. **12** (2015) 1550019 (28pp).
8. T. Zhu, A. Wang, G. Cleaver, K. Kirsten and Q. Sheng, *Power spectral and spectral indices of k -inflation: high-order corrections*, Phys. Rev. D **90** (2014) 103517 (18pp).
9. T. Zhu, A. Wang, G. Cleaver, K. Kirsten and Q. Sheng, *Gravitational quantum effects on power spectra and spectral indices with higher-order corrections*, Phys. Rev. D **90** (2014) 063503 (20pp).

10. T. Zhu, A. Wang, G. Cleaver, K. Kirsten and Q. Sheng, *Constructing analytical solutions of linear perturbations of inflation with modified nonlinear dispersion relations*, Int. J. Mod. Phys. A **29** (2014) 1450142 (12pp).
11. T. Zhu, A. Wang, G. Cleaver, K. Kirsten and Q. Sheng, *Inflationary cosmology with nonlinear dispersion relations*, Phys. Rev. D **89** (2014) 043507 (23pp).
12. K. A. Milton, P. Parashar, E. K. Abalo, F. Kheirandish and K. Kirsten, *Investigations of the torque anomaly in an annular sector. II. Global calculations, electromagnetic case*, Phys. Rev. D **88** (2013) 045030 (9pp).
13. K. A. Milton, F. Kheirandish, P. Parashar, E. K. Abalo, S. A. Fulling, J. D. Bouas, H. Carter and K. Kirsten, *Investigations of the torque anomaly in an annular sector. I. Global calculations, scalar case*, Phys. Rev. D **88** (2013) 025039 (11pp).
14. G. Fucci and K. Kirsten, *Analytic continuation of the doubly-periodic Barnes zeta function*, Applied Mathematics and Computation **221** (2013) 598-609.
15. K. Kirsten, *The Casimir effect and its mathematical implications*, Nuovo Cimento C **36** (2013) 139-162.
16. M. Beauregard, G. Fucci, K. Kirsten and P. Morales, *Casimir effect in the presence of external fields*, J. Phys. A: Math. Theor. **46** (2013) 115401 (15pp).
17. G. Fucci and K. Kirsten, *The spectral zeta function for Laplace operators on warped manifolds of the type $I \times_f N$* , Commun. Math. Phys. **317** (2013) 635-665.
18. G. Fucci and K. Kirsten, *Heat kernel coefficients for Laplace operators on the spherical suspension*, Commun. Math. Phys. **314** (2012) 483-507.
19. T. D. Jeffres, K. Kirsten and T. Lu, *Zeta function on surfaces of revolution*, J. Phys. A: Math. Theor. **45** (2012) 345201 (16pp).
20. G. Esposito, G. Fucci, A.Yu. Kamenshchik and K. Kirsten, *Spectral methods in quantum field theory and quantum cosmology*, J. Phys. A: Math. Theor. **45** (2012) 374004 (26pp).
21. C. G. Beneventano, P. Gilkey, K. Kirsten and E. M. Santangelo, *Heat trace asymptotics and the Gauss-Bonnet theorem for general connections*, J. Phys. A: Math. Theor. **45** (2012) 374010 (12pp).

22. M. van den Berg, P. Gilkey, G. Grigor'yan and K. Kirsten, *Hardy inequality and heat semigroup estimates for Riemannian manifolds with singular data*, Commun. Part. Diff. Equat. **37** (2012) 885-900.
23. J. M. Harrison, K. Kirsten and C. Texier, *Spectral determinants and zeta functions of Schrödinger operators on metric graphs*, J. Phys. A: Math. Theor. **45** (2012) 125206 (14pp).
24. K. Kirsten and P. Loya, *Analytic surgery of the zeta function*, Commun. Math. Phys., **310** (2012) 181-215.
25. G. Fucci and K. Kirsten, *The Casimir effect for generalized piston geometries*, Int. J. Mod. Phys. A **27** (2012) 1260008 (16pp).
26. M. van den Berg, P. Gilkey and K. Kirsten, *Growth of heat trace and heat content asymptotic coefficients*, J. Funct. Anal. **261** (2011) 2293-2322.
27. M. van den Berg, P. Gilkey and K. Kirsten, *Heat trace asymptotics with singular weight functions II*, J. Geom. Anal. **21** (2011) 870-901.
28. G. Fucci and K. Kirsten, *Bose-Einstein condensation on product manifolds*, J. Phys. A: Math. Theor. **44** (2011) 332002 (8pp).
29. G. Fucci and K. Kirsten, *Conical Casimir pistons with hybrid boundary conditions*, J. Phys. A: Math. Theor. **44** (2011) 295403 (23pp).
30. J. M. Harrison and K. Kirsten, *Zeta functions of quantum graphs*, J. Phys. A: Math. Theor. **44** (2011) 235301 (29pp).
31. G. Fucci and K. Kirsten, *The Casimir effect for conical pistons*, JHEP **03** (2011) 016 (30pp).
32. G. Fucci and K. Kirsten, *Small mass expansion of functional determinants on the generalized cone*, J. Phys. A: Math. Theor. **43** (2010) 365204 (22pp).
33. K. Kirsten and P. Morales, *Semitransparent pistons*, Int. J. Mod. Phys. A **25** (2010) 2196-2200.
34. K. Kirsten and P. Loya, *Spectral functions for the Schrödinger operator on $(0, \infty)$ with a singular potential*, J. Math. Phys. **51** (2010) 053512 (29pp).
35. K. A. Milton, J. Wagner and K. Kirsten, *Casimir effect for a semitransparent wedge and an annular piston*, Phys. Rev. D **80** (2009) 125028 (14pp).

36. M. van den Berg, P. Gilkey, K. Kirsten and R. Seeley, *Heat trace asymptotics with singular weight functions*, Communications in Analysis and Geometry **17** (2009) 529-563.
37. K. Kirsten and S. A. Fulling, *Kaluza-Klein models as pistons*, Phys. Rev. D **79** (2009) 065019 (10pp).
38. S. A. Fulling, L. Kaplan, K. Kirsten, Z. H. Liu and K. A. Milton, *Vacuum stress and closed paths in rectangles, pistons, and pistols*, J. Phys. A: Math. Theor. **42** (2009) 155402 (33pp).
39. M. Coons and K. Kirsten, *General moment theorems for non-distinct unrestricted partitions*, J. Math. Phys. **50** (2009) 013517.
40. G. V. Dunne and K. Kirsten, *Simplified vacuum energy expressions for radial backgrounds and domain walls*, J. Phys. A: Math. Theor. **42** (2009) 075402 (22pp).
41. S. A. Fulling and K. Kirsten, *Comment on "The Casimir force on a piston in the spacetime with extra compactified dimensions"* [Phys. Lett. B 668 (2008) 72], Phys. Lett. B **671** (2009) 179-180.
42. J. S. Dowker and K. Kirsten, *Elliptic aspects of statistical mechanics on spheres*, J. Math. Phys. **49** (2008) 113513 (15pp).
43. K. Kirsten, P. Loya and J. Park, *Exotic expansions and pathological properties of ζ -functions on conic manifolds*, J. Geom. Anal. **18** (2008) 835-888.
44. R. Estrada, S. A. Fulling, L. Kaplan, K. Kirsten, Z. Liu and K. A. Milton, *Vacuum stress-energy density and its gravitational implications*, J. Phys. A: Math. Theor. **41** (2008) 164055 (11pp).
45. K. Kirsten, P. Loya and J. Park, *The ubiquitous ζ -function and some of its "usual" and "unusual" meromorphic properties*, J. Phys. A: Math. Theor. **41** (2008) 164070 (11pp).
46. K. Kirsten, P. Loya and J. Park, *Functional determinants for general self-adjoint extensions of Laplace-type operators resulting from the generalized cone*, Manuscripta Mathematica **125** (2008) 95-126.
47. K. Kirsten and P. Loya, *Computation of determinants using contour integrals*, American J. Phys. **76** (2008) 60-64.
48. I. Cavero-Peláez, K. A. Milton and K. Kirsten, *Local and global Casimir energies for a thin cylindrical shell*, J. Phys. A: Math. Theor. **40** (2007) 3607-3631.

49. M. van den Berg, P. B. Gilkey, K. Kirsten and V. A. Kozlov, *Heat content asymptotics for Riemannian manifolds with Zaremba boundary conditions*, Potential Analysis **26** (2007) 225-254.
50. G.V. Dunne and K. Kirsten, *Functional determinants for radial operators*, J. Phys. A: Math. Gen. **39** (2006) 11915-11928.
51. A. Kirchberg, K. Kirsten, E. M. Santangelo and A. Wipf, *Spectral asymmetry on the ball and asymptotics of the asymmetry kernel*, J. Phys. A: Math. Gen. **39** (2006) 9573-9589.
52. K. Kirsten, P. Loya and J. Park, *Zeta functions of Dirac and Laplace-type operators over finite cylinders*, Ann. Phys. **321** (2006) 1814-1842.
53. G. Esposito, G. Fucci, A. Yu. Kamenshchik and K. Kirsten, *New developments in the spectral asymptotics of quantum gravity*, J. Phys. A: Math. Gen. **39** (2006) 6317-6322.
54. K. Kirsten, P. Loya and J. Park, *The very unusual properties of the resolvent, heat kernel, and zeta function for the operator $-d^2/dr^2 - 1/(4r^2)$* , J. Math. Phys. **47** (2006) 043506-(1-27).
55. G. Esposito, G. Fucci, A. Yu. Kamenshchik and K. Kirsten, *A non-singular one-loop wave function of the universe from a new eigenvalue asymptotics in quantum gravity*, JHEP **09** (2005) 063-(1-17).
56. P. B. Gilkey and K. Kirsten, *Stability theorems for chiral bag boundary conditions*, Lett. Math. Phys. **73** (2005) 147-163.
57. P. B. Gilkey, K. Kirsten and JH. Park, *Eta invariants with spectral boundary conditions*, J. Phys. A: Math. Gen. **38** (2005) 8103-8122.
58. G. Esposito, G. Fucci, A. Yu. Kamenshchik and K. Kirsten, *Spectral asymptotics of Euclidean quantum gravity with diff-invariant boundary conditions*, Class. Quantum Grav. **22** (2005) 957-974.
59. G. Esposito, P. B. Gilkey and K. Kirsten, *Heat kernel coefficients for chiral bag boundary conditions*, J. Phys. A: Math. Gen. **38** (2005) 2259-2276.
60. J. S. Dowker and K. Kirsten, *The Barnes zeta function, sphere determinants and Glaisher-Kinkelin-Bendersky constants*, Analysis and Applications **3** (2005) 45-68.
61. P. B. Gilkey, K. Kirsten and JH. Park, *Heat content asymptotics for operators of Laplace type with spectral boundary conditions*, Lett. Math. Phys. **68** (2004) 67-76.

62. K. Kirsten and A. J. McKane, *Functional determinants for general Sturm-Liouville problems*, J. Phys. A: Math. Gen. **37** (2004) 4649-4670.
63. P. B. Gilkey, K. Kirsten and D. V. Vassilevich, *Divergence terms in the supertrace heat asymptotics for the de Rham complex on a manifold with boundary*, J. Geom. Phys. **49** (2004) 249-271.
64. P. B. Gilkey, K. Kirsten and D. V. Vassilevich, *Supertrace divergence terms for the Witten Laplacian*, Potential Analysis **20** (2004) 223-235.
65. C. G. Beneventano, P. B. Gilkey, K. Kirsten and E. M. Santangelo, *Strong ellipticity and spectral properties of chiral bag boundary conditions*, J. Phys. A: Math. Gen. **36** (2003) 11533-11543.
66. K. Kirsten and A. McKane, *Functional determinants by contour integration methods*, Ann. Phys. **308** (2003) 502-527.
67. P. B. Gilkey and K. Kirsten, *Heat content asymptotics with transmittal and transmission boundary conditions*, J. London Math. Soc. **68** (2003) 431-443.
68. P. B. Gilkey and K. Kirsten, *Heat asymptotics with spectral boundary conditions II*, Proc. R. Soc. Edinb. **133A** (2003) 333-361.
69. P. B. Gilkey, K. Kirsten and D. V. Vassilevich, *Heat trace asymptotics defined by transfer boundary conditions*, Lett. Math. Phys. **63** (2003) 29-37.
70. P. B. Gilkey, K. Kirsten, D. V. Vassilevich and A. Zelnikov, *Duality symmetry of the p form effective action and supertrace of the twisted de Rham complex*, Nucl. Phys. B **648** (2003) 542-556.
71. P. B. Gilkey, K. Kirsten and JH. Park, *Heat content asymptotics for spectral boundary conditions*, Trends in Mathematics **5** (2002) 49-58.
72. G. Esposito and K. Kirsten, *Chiral bag boundary conditions on the ball*, Phys. Rev. D **66** (2002) 085014-(1-13).
73. J. S. Dowker and K. Kirsten, *Elliptic functions and temperature inversion symmetry on spheres*, Nucl. Phys. B **638** (2002) 405-432.
74. P. B. Gilkey, K. Kirsten and JH. Park, *Heat content asymptotics for oblique boundary conditions*, Lett. Math. Phys. **59** (2002) 269-276.

75. M. Bordag and K. Kirsten, *Heat kernel coefficients and divergences of the Casimir energy for the dispersive sphere*, Int. J. Mod. Phys. A **17** (2002) 813-819.
76. K. Kirsten, *Heat kernel asymptotics: more special case calculations*, Nucl. Phys. B, Proc. Suppl. **104** (2002) 119-126.
77. P. B. Gilkey, K. Kirsten, JH. Park and D. V. Vassilevich, *Asymptotics of the heat equation with exotic boundary conditions or with time dependent coefficients*, Nucl. Phys. B, Proc. Suppl. **104** (2002) 63-70.
78. G. Cognola, E. Elizalde and K. Kirsten, *Casimir energies for spherically symmetric cavities*, J. Phys. A: Math. Gen. **34** (2001) 7311-7327.
79. H. Falomir, K. Kirsten and K. Rebola, *Divergencies in the Casimir energy for a medium with realistic ultraviolet behaviour*, J. Phys. A: Math. Gen. **34** (2001) 6291-6299.
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