

KOSTAS SKENDERIS

Curriculum Vitae

Personal information

Last Name: Skenderis
First Name: Konstantinos (Kostas)
Date of Birth: 09 March 1970
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Employment

- 01/2003-present : Associate Professor (UHD),
Institute for Theoretical Physics, and
Korteweg-de Vries Institute for Mathematics,
University of Amsterdam
- 01/2001-12/2002: Assistant Professor,
Physics Department, Princeton University.
- 01/2000-12/2000: Research Associate,
Physics Department, Princeton University.
- 09/1998-12/1999: Research Fellow,
Spinoza Institute, Utrecht University.
- 09/1996-08/1998: Research Fellow
Instituut voor Theoretische Fysica, KU Leuven.

Education:

- 1991-1996 : Ph.D in Theoretical Particle Physics.
Institute for Theoretical Physics,
State University of New York at Stony Brook, USA
Title of Thesis: Perturbative QFT in 1, 2 and 4 dimensions.
Advisor: Prof. Peter van Nieuwenhuizen.
- 1987 - 1991 : B.Sc. in Physics, Department of Physics, Aristotle University of Thessaloniki, Greece

Grants

- 2009-2014: VICI grant (1,250,000 Euros)
- 2003-2008: Vernieuwingsimpuls (Innovational Research Incentive Scheme) grant (675,000 Euros).
- Co-investigator for University of Amsterdam research initiative, Gravitation and Astro-particle Physics Amsterdam, GRAPPA. (Structural funds of around 300,000 Euros per annum).
- 2009: FOM Programme “A String Theoretic Approach to Cosmology and Quantum Matter” (with E.P. Verlinde, J. de Boer, M.M. Taylor, J.P. van der Schaar, A. Achúcarro, K. Schalm, J. Zaanen, S. Vandoren, E.A. Bergshoeff) (2,200,000 Euros)
- 2002: FOM grant (162,000 Euros) for a postdoctoral position (with J. de Boer).

Fellowships and Awards

- Visiting Professorships: Texas A&M (2003), Universidad Catolica de Chile Santiago, Chile (2004), Ecole Polytechnique, France (2005).
- Visiting Fellowships: CERN (1997, 1998, 2001, 2008), Cambridge (1997, 2002, 2007), Santa Barbara (1999, 2009), Galileo Galilei Institute (2009), Caltech-USC (2001).
- 1996-1998: Individual E.C. Fellowship, Human Capital and Mobility Programme.
- 1993: Patrick M. S. Blackett Scholarship, Erice.
- 1987-1991 : Awards for excellence in study, Aristotle University of Thessaloniki.

Administration

- Education committee for physics and astronomy (since September 2009).
- Administering PhD admissions, Institute for Theoretical Physics, University of Amsterdam, Netherlands.
- Scientist-in-charge for the Amsterdam node in the “The European Superstring Network” (till 2008).
- Generals Exam committee, Princeton, 2001.
- Generals Exam committee, Princeton, 2002.

Conferences and workshops

- Organized the PhD school of the Dutch Research School for Theoretical Physics, 2007.
- Organized Amsterdam workshops: 2003, 2005, 2006, 2008, 2010.
- Organized “Eurostrings 2008” conference, Amsterdam, 2008.
- Organized a parallel session in 12th Marcel Grossmann meeting, Paris, 2009.
- Organized a focus session at the “Physics@FOM Veldhoven 2010” meeting, Veldhove, Netherlands, 2010.
- International Organizing Committee, “On Gauge Theories And The Structure Of Spacetime”, Heraklion, Greece, 11-18 September 2010.

Services to Profession

- Referee for National Science Foundation (NSF) proposals, USA
- Referee for Chilean Research Fund Council (FONDECYT), Chile
- Referee for Israel Science Foundation (ISF), Israel
- Referee for Dutch Foundation for fundamental Research and Matter (FOM), Netherlands.
- Referee for Particle Physics Funding Council (PPARC), UK
- Referee for Engineering and Physical Science Research Council (EPSRC), UK
- Referee for KU Leuven, Belgium
- Referee for Cambridge University, UK
- Referee for Chalmers University, Gothenburg, Sweden
- Referee for: Journal of High Energy Physics, Nuclear Physics B, Physics Letters B, Classical and Quantum Gravity, Physical Review D, Physical Review Letters, Communication in Mathematical Physics, Europhysics Letters, Journal of Physics A, Journal of Mathematical Physics, International Journal for Modern Physics, A, Letters in Mathematical Physics.

Teaching experience

- 2003-present : Supervising masters and bachelors students. Teaching in the masters and bachelors program of Institute for Theoretical Physics, University of Amsterdam, Netherlands:
 - String Theory (Masters): Spring semester 2008, 2009, 2010, 2011.
 - Electrodynamics II (Bachelors): Spring semester 2010, 2011.
- PhD students:
 1. Ioannis Papadimitriou,
Thesis: “Aspects of the Gauge/Gravity duality and holography”, graduated 2005, currently a postdoc at CERN, Geneva, Switzerland.
 2. Miranda Cheng (co-supervised with E. Verlinde),
Thesis: “The spectra of supersymmetric states in string theory”, graduated 2008, currently a postdoc at Harvard, USA.
 3. Joost Hoogeveen,
Thesis: “Fundamentals of the pure spinor superstring”, graduated in July 2010.
 4. Balt van Rees,
Thesis: “Dynamics and the gauge/gravity duality”, graduated in September 2010, cum laude, currently a postdoc at Stony Brook, USA.
 5. Milena Smolic, expected to graduate in 2012.
 6. Jelena Smolic, expected to graduate in 2012.
 7. Adam Bzowski, expected to graduate in 2013.
 8. Yegor Korovin, expected to graduate in 2014.
- Masters students
 1. Diandrew Lexter L. Dy, “The initial-value problem for Asymptotically Anti-de Sitter Spacetimes and Numerical General Relativity”, 2010.
 2. Manuel Arredondo Ruiz, “Approaches to Asymptotic symmetries and conserved charges in gravitational theories”, 2010.
 3. Jason Dekdebrun, “Cosmological Inflation”, 2010, Cum Laude, won Shell stipend for Theoretical Physics.

4. Kasper Fernhout, “Cosmological Billiards”, 2008.
 5. Boaz van der Plas, “Scalar field models for dark energy”, 2008.
 6. Panagiotis Katsaroumpas, “Recursion relations for scattering amplitudes in Yang-Mills theory”, 2007, Cum laude.
 7. Balt van Rees, “Wormholes in 2+1 dimensions”, 2006, Cum laude.
- Bachelors projects
 1. R. Altmann, “Magnetic Monopoles”, 2010.
 2. R.S. Sheikh, “Semiclassical decay of rotating strings”, 2009.
 3. L.J. Nauta, “Supersymmetric Quantum Mechanics”, 2009
 - Teaching in the Amsterdam-Brussels-Paris PhD school:
Gauge/gravity duality (10 hours): 2007, 2008, 2009.
 - 2001-2002: Graduate and undergraduate courses in physics,
Physics Department, Princeton University, USA:
 - Spring semester 2001: Advanced String Theory (Graduate course)
 - Fall semester 2001: Physics 103 (Undergraduate course)
 - Spring semester 2002: Physics 104 (Undergraduate course)
 - Fall semester 2002: Physics 103 (Undergraduate course)
 - 1998: Supervising physics projects for last year undergraduate students
in physics, Physics Department, Leuven University, Belgium.
 - 1991-1992: Teaching Assistant for undergraduate and graduate courses,
Physics Department, SUNY at Stony Brook, USA.

Lectures in Schools

1. *Introduction to Holographic renormalization*, 5th Aegean Summer School “From Gravity to thermal Gauge theories: the AdS/CFT correspondence”, Milos, Greece, September 21-26, 2009.
2. *Introduction to the AdS/CFT correspondence*, Corfu Summer Institute, Corfu, Greece, 6-13 September, 2009.
3. *Precision Holography and Applications*, IPM String School and Workshop, Isfahan, Iran, April 9-17, 2008.
4. *Holography and the fuzzball proposal for black holes*, European Superstring Network School, Budapest, Hungary, September 2007.
5. *Introduction to AdS-CFT*, André Swieca Summer School, Sao Paulo, Brazil, February 2007.
6. *Introduction to the AdS/CFT correspondence*, International School of High Energy Physics and Cosmology, Heraklion, Greece, October, 2005.
7. *Holographic Renormalization*, The Onassis Foundation science lecture series, The 2004 Lectures Lectures in Physics, Fields and Strings, Heraklion, Greece, July 2004.
8. *Holographic Renormalization*, European Winter School, RTN 2002, Utrecht, January 2002.
9. *Black Holes in String Theory*, Karpacz Winter School, “From Cosmology to Quantum Gravity” Polanica, Poland, February 1999.
10. *Black Holes and Branes in String Theory*, Erice, International School of Subnuclear Physics, 36th Course: From the Planck Length to the Hubble Radius, September 1998.

Talks

• 2010

1. Holographic Cosmology, “Rencontres theoretiennes”, Paris, December 16.
2. Holography for Cosmology, “AdS/CFT and Novel Approaches to Hadron and Heavy Ion Physics”, KITPC, Beijing, China, talk on October 12.
3. Holographic Non-Gaussianity, “Focus week on string cosmology” workshop at IPMU, Japan (October 4-8), talk on October 5.
4. Holography for Schrödinger, 35th International Conference on High Energy Physics (ICHEP), Paris (July 22-18), talk on July 25.
5. Holographic cosmology, “Cosmological Frontiers in Fundamental Physics” workshop at the Perimeter Institute (June 15-18), talk on June 15.
6. The holographic universe, University of Barcelona, Barcelona, Spain, April 29.
7. Holographic Inflation, Crete Workshop on the Frontiers of Cosmology, Heraklion, Greece, talk on April 3.
8. Higher derivative corrections to supergravity using the pure spinor superstring, Simons Center Workshop “Superstrings in Ramond-Ramond backgrounds”, Stony Brook, USA, talk on March 25.

• 2009

1. Holography for cosmology, Holographic cosmology workshop, Montreal, Canada, October 2.
2. The holographic universe, First Mediterranean Conference on Classical and Quantum Gravity, Kolymbari, Greece, September 14.
3. Holography for cosmology, Summer Institute in Paris, Paris, France, August 25.

4. Holography for cosmology, Holographic cosmology End conference, Perimeter Institute, , Waterloo, Canada, July 18.
5. Holography for cosmology, 12th Marcel Grossmann Meeting Paris, France, July 13.
6. Topologically Massive gravity and AdS/CFT, The Planck scale, XXV Max Born Symposium, Wroclaw, Poland June 30.
7. Real-time gauge/gravity duality, Aspen workshop: String Duals of Finite Temperature and Low-Dimensional Systems, Aspen, USA, talk on June 2.
8. Holographic dualities and applications, Dutch National Seminar, Amsterdam, March 27.
9. Holography and Mathematics, KdV Institute for Mathematics, Amsterdam, March 4, Colloquium.
10. Unraveling the mysteries of black holes using holography, Utrecht university, February 11, Colloquium.
11. BRST derivation of the pure spinor scattering amplitude prescription and anomalies, Fundamental Aspects of Superstring Theory, Santa Barbara, USA January 22.

• 2008

1. Geometric flows and holography, “Workshop on Field Theory and Geometric Flows”, Munich, Germany, November 14-28, talk on November 24.
2. Non-conformal holography, Perimeter, Canada, November 18.
3. The fuzzball proposal for black holes, Paris summer workshop at Ecole Normale Superieure, 25-29 August, talk on August 28.
4. The fuzzball proposal for black holes, CERN black hole institute, August 25.
5. Real-time gauge/gravity duality, Gravitational Thermodynamics and the Quantum Nature of Space Time, 16-20 June 2008, Edinburgh, UK, talk on June 20.

6. Issues in Gauge/gravity duality, 32nd John Hopkins Workshop Perspectives in String Theory, May 28-31, Seoul, Korea, two talks.
7. Real-time gauge/gravity duality, Swansea, UK, May 16.
8. The fuzzball proposal for black holes, Santa Barbara, USA, March 13.
9. The fuzzball proposal for black holes, UCLA, USA, March 10.
10. The fuzzball proposal for black holes, San Diego, USA, March 4.
11. Holography and Fuzzball Proposal, Tor Vergata, Rome, Italy, 01 February.

• 2007

1. KK holography and applications, ICTP, Trieste, Italy, December 4.
2. BRST quantization of the pure spinor superstring, Programme on “Strong Fields, Integrability and Strings”, Isaac Newton Institute for Mathematical Sciences, 23 July - 21 December 2007, talk on November 8.
3. The fuzzball proposal for black holes, 5th Simons Workshop in Mathematics and Physics, Stony Brook, July 30 - August 31, 2007, talk on August 3.
4. The domain-wall/cosmology correspondence, Eurostrings 2007, Crete, Greece, talk on July 3.
5. Holographic methods and applications to black holes, Fourth regional meeting in String Theory, Patras, Greece, talk on June 12.
6. Holographic methods and applications to black holes, Imperial College, London, UK, May 24.
7. Holography and black holes, YITP Anniversary Symposium, SUNY at Stony Brook, USA, talk on May 5.
8. Holographic methods and applications to black holes, SPhT, Saclay, Paris, France, April 6.
9. Holographic methods and applications to black holes, Ecole Polytechnique, Paris, France, April 5.

10. Holographic anatomy, CPT, Durham, UK, February 27, 2007, colloquium.
11. String theory and holographic dualities, DAMTP, Cambridge, UK, February 20.

• 2006

1. Cosmology/Domain-wall correspondence, KU Leuven, Belgium, November 9.
2. Quantum gravity, Strings, Branes and Holography, Heraklion, Greece, October 5, colloquium.
3. Cosmology/Domain-wall correspondence, Heraklion, Greece, September 28.
4. Holographic anatomy, 4th Simons Workshop in Mathematics and Physics, Stony Brook, July 24 - August 25, 2006, talk on August 15.
5. Kaluza-Klein Holography, Potsdam, Germany, April 25.
6. Kaluza-Klein Holography, Queen Mary, London, UK, March 23.
7. Kaluza-Klein Holography, Barcelona, Spain, February 16.

• 2005

1. Conserved charges and positivity of energy for asymptotically locally AdS spacetimes, Riemannian Geometry and GR, Isaac Newton Institute for Mathematical Science, Cambridge, UK, 26 September- 9 October, talk on October 3.
2. Conserved charges and thermodynamics for asymptotically locally AdS spacetimes, String Theory-2005, Benasque, Spain, July 17-29, 2005, talk on July 19.
3. Positivity of energy for Asymptotically AdS spacetimes, Les Rencontres théoriciennes, Institut Henri Poincaré, Paris, France, March 23.

4. Comments on the BRST quantization of strings, ENS, Paris, France, March 17.
5. Lectures on Holographic renormalization. Santiago de Compostela, Spain, three lectures on February 16, 17, 18.
6. Positivity of energy for Asymptotically AdS spacetimes, Hamburg, Germany, February 2.

• 2004

1. Holographic Renormalization, Uppsala, Sweden, June 2, 2 lectures.
2. Fake supergravity and gravitational stability, Weizmann Institute, Rehovot, Israel, March 29.
3. Fake supergravity and gravitational stability, CECS summer meeting on theoretical Physics, Valdivia, Chile, January 19-21, 2004, talk on January 19.
4. Dualities in string theory, Universidad Catolica de Chile, Santiago, Chile, January 13.

• 2003

1. Properties of branes in curved spacetimes, University of Bonn, Germany, December 2.
2. Holographic Renormalization and Geometry, 73rd Meeting between Physicists and Mathematicians on (A)dS/CFT correspondence, 11-13 September, 2003, Strasbourg, France, talk on September 11.
3. Comments on branes in plane waves, 36th International Symposium Ahrenshoop on the Theory of Elementary Particles, 26-30 August 2003, talk on August 29.
4. Worldvolume supersymmetries for branes in plane waves, LPTHE, Paris, France, June 3.
5. Worldvolume supersymmetries for branes in plane waves, ULB, Brussels, Belgium, May 28.

6. String theory and Holography, Trends in Theory 2003, Dalfsen May 22-23, talk on May 23.
7. String corrections to IIB supergravity, Instituto de Fisica Teorica, Sao Paulo, Brazil, March 31.
8. String, branes and holography, Instituto de Fisica Teorica, Sao Paulo, Brazil, March 26, Colloquium.
9. Branes in plane waves, Instituto de Fisica Teorica, Sao Paulo, Brazil, March 24.
10. Holographic renormalization, International Conference Renormalization Group and Anomalies in Gravity and Cosmology, Ouro Preto, Brazil, 17 - 23 of March, 2003, talk on March 20.
11. Open Strings in Plane-wave Backgrounds, Inaugural Conference:Holography and the AdS/CFT Correspondence, Galveston, Texas, USA, March 12-14, 2003, talk on March 13.
12. Three lectures on Holographic renormalization, Holography and the AdS/CFT correspondence, workshop, Texas A & M, February 24-March 21, 2003, lectures delivered on February 27, March 3, March 5.
13. Open Strings in Plane-wave Backgrounds, Utrecht university, February 7.

Talks at Strings

1. "Supersymmetric completion of the R^4 term in IIB supergravity", Strings 2002, Cambridge, England.
2. "Holography and renormalization in the AdS/CFT correspondence", Strings 2000, Michigan, USA.

Talks before 2003 (incomplete list):

Supergravity at 25, Stony Brook, USA, 2001; International Symposium Ahrenshoop 1999; Gursev memorial conference, Istanbul, Turkey, 2000; Fradkin memorial conference, Moscow, Russia, 2000; Aspen, 1998; Spinoza meeting on the Quantum Black hole, Utrecht, 1998.